# Galaxy

SCIENCE FICTION

SEPTEMBER 1954

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THE MAN WHO WAS SIX
By F. L. Wallace

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SEPTEMBER, 1954 VOL. 8, NO. 6

# Galaxy

## SCIENCE FICTION

**ALL ORIGINAL STORIES • NO REPRINTS!**

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EVELYN PAIGE, Managing Editor SAM MERWIN, Jr., Associate Editor
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# QWERTYUIOP

THE title of this piece should be more familiar than "etaoin shrdlu." For some typically human reason, it isn't, even though you may never have seen a Linotype machine and probably own a thing that goes "qwertyuiop."

The item, of course, is the typewriter. Its biography has been written by Bruce Bliven, Jr., entitled *The Wonderful Writing Machine* and published by Random House. And about time, too—I've been beating typewriters for a quarter of a century and never once guessed the astonishing history of this unobtrusive and yet revolutionary invention.

How astonishing can the typewriter be? Well, on the dust jacket of the book is a quiz. I won't try to answer all the questions, because you'll undoubtedly want to find them yourself.

1. What well-known author has devised a successful Chinese typewriter?

2. What is the volume of business done annually in the United States in typewriter ribbons and carbons: $50,000; $500,000; $50,000,000?

3. In what year did an English engineer think up the basic idea of a typewriter: 1714; 1832; 1888?

I can't pass up this bit of shocking news. It was on January 7, 1714, that Queen Anne granted an English engineer, Henry Mill, a Royall Letters Patent with exclusive rights for the next fourteen years to "an artificial machine or method for the impressing or transcribing of letters singly or progressively one after another, as in writing . . ."

Whether Mill actually built the machine is not known. In any case, the Russians can't claim the invention—the first Russian typewriter was made by Jaan Jaackson in Riga about 1840, while the first American machine was invented by William Austin Burt in 1828.

*But it is the fifty-second inventor of the typewriter,* Christopher Latham Sholes of Milwaukee, who is called the father of the typewriter, for his device laid down most of the basic principles of the modern one.

4. What is the origin of the popular phrase, "Now is the time for all good men to come to the aid of their party"? Believe it or not, that was the campaign slogan of Ulysses S. Grant!

5. Why did the first typewriters sold look somewhat like sewing machines? The answer is simple—they were manufactured in a sewing machine factory. The



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foot treadle was used to haul the typewriter carriage back to starting position.

6. Who was the first author to turn in to his his publisher a typewritten book manuscript? I'm glad it was Mark Twain; I'd hate to have the honor go to one of the literary slobberers who infested that period.

7. How many schools teach typing in the United States today: 2,300; 23,000; 230,000?

8. How much does it cost to produce the average business letter? A dismaying 80c to $1.30—enough to stab a businessman right in the wallet.

9. Why is the keyboard arrangement of all typewriters hopelessly inefficient?

The damned thing just happened, with the result that something like 63% of the work is done by the left hand. Keyboards based on letter frequency have been devised, but "qwertyuiop" looks as if it's here to stay; the job of retraining several million typists is just too big—and getting bigger every year. Yet a more efficient keyboard can boost speed and accuracy 25% or more!

13. Is there any advantage to having a silk typewriter ribbon instead of one made of cotton? Bliven says yes. I say no—silk costs too much, prints too faintly and you hate to throw it out even long after you should.

15. How many typewriters are used on a United States battleship: 5; 55; 550? Naval orders call for 55 machines, but I find that less intoxicating than this information—in the Army, during combat, there are more typewriters within four thousand yards of the front lines than medium and light artillery pieces combined!

The rest of the book contains equally startling data that I'm sure you'll want to read. But for us in science fiction, the typewriter is another proof that the really vast societal changes are brought about by seemingly unimportant things.

The suffragettes fought heroically and uselessly for equality of the sexes—never realizing that the typewriter had ended the battle. It brought women out of the home, made them economically independent. The franchise was only a political recognition of an evolutionary fact that had come about almost unnoticed.

Much more than today's international strife, or atomic power, or perhaps rocketry, there are insignificant-looking gadgets in the lab or even in common use that will shape the future. What are they? You'll find many of the answers in science fiction. You might have one in your hand right now!

—H. L. GOLD


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# The man who

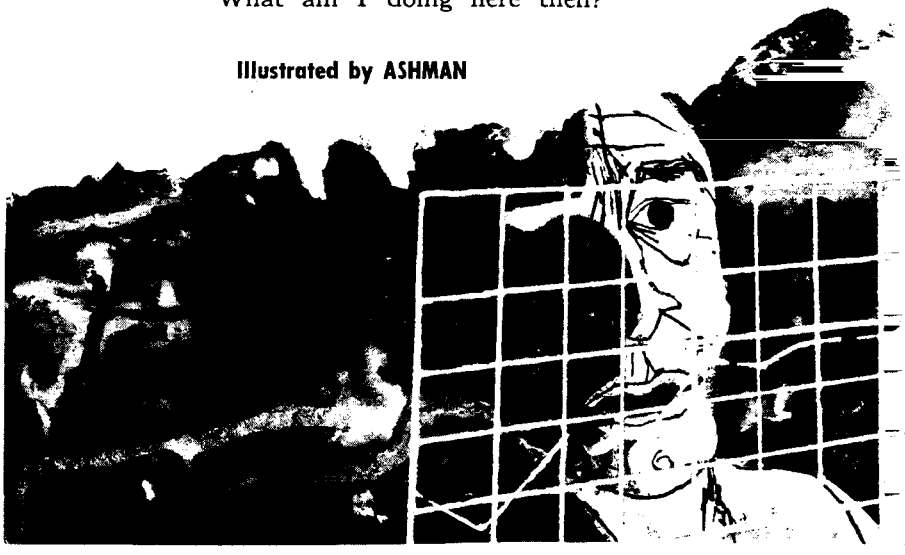
By F. L. WALLACE

***There is nothing at all like having a sound mind in a sound body, but Dan Merrol had too much of one—and also too much of the other!***

"SORRY, darling," said Erica. She yawned, added, "I've tried—but I just can't believe you're my husband."

He felt his own yawn slip off his face. "What do you mean? What am I doing here then?"

**Illustrated by ASHMAN**





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"Can't you remember?" Her laughter tinkled as she pushed him away and sat up. "They said you were Dan Merrol at the hospital, but they must have been wrong."

"Hospitals don't make that kind of mistake," he said with a certainty he didn't altogether feel.

"But *I* should know, shouldn't I?"

"Of course, but . . ." He did some verbal backstepping. "It was a bad accident. You've got to expect that I won't be quite the same at first." He sat up. "*Look* at me. Can't you tell who I am?" She returned his gaze, then swayed toward him. He decided that she was highly attractive—but surely he ought to have known that long ago.

WITH a visible effort she leaned away from him. "Your left eye does look familiar," she said cautiously. "The brown one, I mean."

"The *brown* one?"

"Your other eye's green," she told him.

"Of course—a replacement. I told you it was a serious accident. They had to use whatever was handy."

"I suppose so—but shouldn't they have tried to stick to the original color scheme?"

"It's a little thing," he said. "I'm lucky to be alive." He took her hand. "I believe I can convince you I'm *me*."

"I wish you could." Her voice was low and sad and he couldn't guess why.

"My name is Dan Merrol."

"They told you that at the hospital."

They hadn't—he'd read it on the chart. But he had been alone in the room and the name had to be his, and anyway he *felt* like Dan Merrol. "Your name is Erica."

"They told you that too."

She was wrong again, but it was probably wiser not to tell her how he knew. No one had said anything to him in the hospital. He hadn't given them a chance. He had awakened in a room and hadn't wanted to be alone. He'd got up and read the chart and searched dizzily through the closet. Clothes were hanging there and he'd put them on and muttered her name to himself. He'd sat down to gain strength and after a while he'd walked out and no one had stopped him.

It was night when he left the hospital and the next thing he remembered was her face as he looked through the door. Her name hadn't been on the chart nor her address and yet he had found her. That proved something, didn't it? "How could I



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forget you?" he demanded.

"You may have known someone else with that name. When were we married?"

Maybe he should have stayed in the hospital. It would have been easier to convince her there. But he'd been frantic to get home. "It was quite a smashup," he said. "You'll have to expect some lapses."

"I'm making allowances. But can't you tell me something about myself?"

He thought—and couldn't. He wasn't doing so well. "Another lapse," he said gloomily and then brightened. "But I can tell you lots about myself. For instance, I'm a specialist in lepidoptera."

"What's that?"

"At the moment, who knows? Anyway, I'm a well-known actor and a musician and a first-rate mathematician. I can't remember any equations offhand except C equals pi R squared. It has to do with the velocity of light. And the rest of the stuff will come back in time." It was easier now that he'd started and he went on rapidly. "I'm thirty-three and after making a lot of money wrestling, married six girls, not necessarily in this order—Lucille, Louise, Carolyn, Katherine, Shirley and Miriam." That was quite a few marriages—maybe it was thoughtless of him to have mentioned them. No woman approves her predecessors.

"That's six. Where do I come in?"

"Erica. You're the seventh and best." It was just too many, now that he thought of it, and it didn't seem right.

She sighed and drew away. "That was a lucky guess on your age."

DID that mean he wasn't right on anything else? From the expression on her face, it did. "You've got to expect me to be confused in the beginning. Can't you really tell who I am?"

"I *can't!* You don't have the same personality at all." She glanced at her arm. There was a bruise on it.

"Did I do that?" he asked.

"You did, though I'm sure you didn't mean to. I don't think you realized how strong you were. Dan was always too gentle—he must have been afraid of me. And *you* weren't at all."

"Maybe I was impetuous," he said. "But it was such a long time."

"Almost three months. But most of that time you were floating in gelatin in the regrowth tank, unconscious until yesterday." She leaned forward and caressed his cheek. "Everything seems wrong, no matter how hard I try to believe otherwise. You


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don't have the same personality —you can't remember anything."

"And I have one brown eye and one green."

"It's not just that, darling. Go over to the mirror."

He had been seriously injured and he was still weak from the shock. He got up and walked unsteadily to the mirror. "Now what?"

"Stand beside it. Do you see the line?" Erica pointed to the glass.

He did—it was a mark level with his chin. "What does it mean?"

"That should be the top of Dan Merrol's head," she said softly.

He was a good six inches taller than he ought to be. But there must be some explanation for the added height. He glanced down at his legs. They were the same length from hip bone to the soles of his feet, but the proportions differed from one side to the other. His knees didn't match. *Be-dum, be-dum, be-dumdum, but your knees don't match*—the snatch of an ancient song floated through his head.

Quickly, he scanned himself. It was the same elsewhere. The upper right arm was massive, too big for the shoulder it merged with. And the forearm, while long, was slender. He blinked and looked again. While they were patching him up, did they really think he needed black, red and brown hair? He wondered how a beagle felt.

WHAT were they, a bunch of humorists? Did they, for comic effect, piece together a body out of bits and scraps left over from a chopping block? It was himself he was looking at, otherwise he'd say the results were neither hideous nor horrible, but merely—well, what? Ludicrous and laughable—and there were complications in that too. Who wants to be an involuntary clown, a physical buffoon that Mother Nature hadn't duplicated since Man began?

He felt the stubble on his face with his left hand—he *thought* it was his left hand—at least it was on that side. The emerging whiskers didn't feel like anything he remembered. Wait a minute—was it *his* memory? He leaned against the wall and nearly fell down. The length of that arm was unexpectedly different.

He hobbled over to a chair and sat down, staring miserably at Erica as she began dressing. There was quite a contrast between the loveliness of her body and the circus comedy of his own.

"Difficult, isn't it?" she said, tugging her bra together and closing the last snap, which took considerable effort. She was a


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small girl generally, though not around the chest.

It was difficult and in addition to his physique there were the memories he couldn't account for. Come to think of it, he must have been awfully busy to have so many careers in such a short time — *and* all those wives too.

Erica came close and leaned comfortingly against him, but he wasn't comforted. "I waited till I was sure. I didn't want to upset you."

He wasn't as sure as she seemed to be now. Somehow, maybe he was still Dan Merrol—but he wasn't going to insist on it—not after looking at himself. Not after trying to sort out those damned memories.

She was too kind, pretending to be a little attracted to him, to the scrambled face, to the mismatched lumps and limbs and shapes that, stretching the term, currently formed his body. It was clear what he had to do.

THE jacket he had worn last night didn't fit. Erica cut off the sleeve that hung far over his fingertips on one side and basted it to the sleeve that ended well above his wrist, on the other. The shoulders were narrow, but the material would stretch and after shrugging around in it, he managed to expand it so it was not too tight.

The trousers were also a problem—six inches short with no material to add on, but here again Erica proved equal to the task and, using the cuffs, contrived to lengthen them. Shoes were another difficulty. For one foot the size was not bad, but he could almost step out of the other shoe. When she wasn't looking, he wadded up a spare sock and stuffed it in the toe.

He looked critically at himself in the mirror. Dressed, his total effect was better than he had dared hope it would be. True, he did look *different.*

Erica gazed at him with melancholy affection. "I can't understand why they let you out wearing those clothes—or for that matter, why they let you out at all."

He must have given some explanation as he'd stumbled through the door. What was it?

"When I brought the clothes yesterday, they told me I couldn't see you for a day or so," she mused aloud. "It was the first time you'd been out of the regrowth tank—where no one could see you—and they didn't know the clothes wouldn't fit. You were covered with a sheet, sleeping, I think. They let me peek in and I could make out a corner of your face."

It was the clothes, plus the brief glimpse of his face, which


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had made her think she recognized him when he came in.

"They told me you'd have to have psychotherapy and I'd have to have orientation before I could see you. That's why I was so surprised when you rang the bell."

His head was churning with ideas, trying to sort them out. Part of last night was dim, part sharp and satisfying.

"What's Wysocki's theorem?" she asked.

"*Whose* theorem?"

"Wysocki's. I started to call the hospital and you wouldn't let me, because of the theorem. You said you'd explain it this morning." She glanced at the bruise on her arm.

It was then he'd grabbed her, to keep her from talking to the hospital. He'd been unnecessarily rough, but that could be ascribed to lack of coordination. She could have been terrified, might have resisted—but she hadn't. At that time, she must have half-believed he was Dan Merrol, still dangerously near the edges of post-regrowth shock.

SHE was looking at him, waiting for that explanation. He shook his mind frantically and the words came out. "Self-therapy," he said briskly. "The patient alone understands what he needs." She started to interrupt, but he shook his head and went on blithely. "That's the first corollary of the theorem. The second is that there are critical times in the recovery of the patient. At such times, with the least possible supervision, he should be encouraged to make his own decisions and carry them through by himself, even though running a slight risk of physical complications."

"That's new, isn't it?" she said. "I always thought they watched the patient carefully."

It ought to be new—he'd just invented it. "You know how rapidly medical practices change," he said quickly. "Anyway, when they examined me last night, I was much stronger than they expected—so, when I wanted to come home, they let me. It's their latest belief that initiative is more important than perfect health."

"Strange," she muttered. "But you are very strong." She looked at him and blushed. "Initiative, certainly you have. Dan could use some, wherever he is."

Dan again, whether it was himself or another person. For a brief time, as she listened to him, he'd had the silly idea that . . . But it could never happen to him. He'd better leave now while she was distracted and bewildered and believed what he was saying. "I've got to go. I'm due back," he told her.


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"Not before you eat," she said. "Any man who's spent the night with me is hungry in the morning."

It was a domestic miracle that amidst all the pressing and fitting, she'd somehow prepared breakfast and he hadn't noticed. It was a simple chore with the automatics, but to him it seemed a proof of her wifely skill.

He wanted to protest, but didn't. Maybe it was the hand she was holding—it seemed to be equipped with a better set of nerves than its predecessor. It tingled at her touch. Sadly, he sat down and looked at his food. Eat? Did he want to eat? Oddly enough, he did.

"How much do you remember of the accident?" She shoved aside her own food and sat watching him.

NOT a thing, now that she asked. In fact, there wasn't much he did remember. There had been the chart at his bedside, with one word scrawled on it—*accident*—and that was where he'd got the idea. There had been other marks too, but he hadn't been able to decipher them. He nodded and said nothing and she took it as he thought she would.

"It wasn't anybody's fault. The warning devices which were supposed to work didn't," she began. "A Moon ship collided with a Mars liner in the upper atmosphere. The ships broke up in several parts and since they are compartmented and the delay rockets switched on immediately, the separate parts fell rather gently, considering how high they were. Casualties weren't as great as you might think.

"Parts of the two ships fell together, the rest were scattered. There was some interchange of passengers in the wreckage, but since you were found in the control compartment of the Mars liner, they assumed you were the pilot. They never let me see you until yesterday and then it was just a glimpse. I took their word when they said you were Dan Merrol."

At least he knew who or what Dan Merrol was—the pilot of the Mars liner. They had assumed he was the pilot because of where he was found, but he might have been tossed there—impact did strange things.

Dan Merrol was a spaceship pilot and he hadn't included it among his skills. It was strange that she had believed him at all. But now that it was out in the open, he did remember some facts about spaceships. He felt he could manage a takeoff at this instant.

But why hadn't he told her? Shock? Perhaps—but where had


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those other identities come from —lepidopterist, musician, actor, mathematician and wrestler? And where had he got memories of wives, slender and passionate, petite and wild, casual and complaisant, nagging and insecure?

Erica he didn't remember at all, save from last night, and what was that due to?

"What are you going to do?" he asked, deliberately toying with the last bite of breakfast. It gave him time to think.

"They said they'd identified everyone, living or dead, and I supposed they had. After seeing you, I can believe they made any number of similar mistakes. Dan Merrol may be alive under another name. It will be hard to do, but I must try to find him. Some of the accident victims went to other hospitals, you know, the ones located nearest where they fell."

Even if he was sure, he didn't know whether he could tell her —and he wasn't sure any longer, although he had been. On the physical side of marriage, how could he ask her to share a body she'd have to laugh at? Later, he might tell her, if there was to be a 'later.' He pushed back his chair and looked at her uncertainly.

"Let me call a 'copter," she said. "I hate to see you go."

"Wysocki's theorem," he told her. "The patient has decided to walk." He weaved toward the door and twisted the knob. He turned in time to catch her in his arms.

"I know this is wrong," she said, pressing against him.

It might be wrong, but it was very pleasant, though he did guess her motives. She was a warmhearted girl and couldn't help pitying him. "Don't be so damned considerate," he mumbled.

"You'll have to put me down," she said, averting her eyes. "Otherwise . . . You're an intolerable funny man."

He knew it—he could see himself in the mirror. He was something to laugh at when anyone got tired of pretending sympathy. He put her down and stumbled out. He thought he could hear the bed creak as she threw herself on it.

## II

ONCE he got started, walking wasn't hard. His left side swung at a different rate from his right, but that was due to the variation in the length of his thighs and lower legs, and the two rhythms could be reconciled. He swept along, gaining control of his muscles. He became aware that he was whizzing past everyone.


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He slowed down—he didn't want to attract attention. It was difficult but he learned to walk at a pedestrian pace. However poorly they'd matched his legs, they'd given him good ones.

Last night, on an impulse, he'd left the hospital and now he had to go back. *Had* to? Of course. There were too many uncertainties still to be settled. He glanced around. It was still very early in the morning and normal traffic was just beginning. Maybe they hadn't missed him yet, though it was unlikely.

He seemed to know the route well enough and covered the distance in a brief time. He turned in at the building and, scanning the directory, went at once to the proper floor and stopped at the desk.

THE receptionist was busy with the drawer of the desk. "Can I help you?" she asked, continuing to peer down.

"The director—Doctor Crander. I don't have an appointment."

"Then the director can't see you." The girl looked up and her firmly polite expression became a grimace of barely suppressed laughter.

Then laughter was swept away. What replaced it he couldn't say, but it didn't seem related to humor. She placed her hand near his but it went astray and got tangled with his fingers. "I just thought of a joke," she murmured. "Please don't think that I consider you at all funny."

The hell she didn't—and it was the second time within the hour a woman had used that word on him. He wished they'd stop. He took back his hand, the slender one, an exquisite thing that might once have belonged to a musician. Was there an instrument played with one hand? The other one was far larger and clumsier, more suited to mayhem than music. "When can I see the director?"

She blinked at him. "A patient?" She didn't need to look twice to see that he had been one. "The director does occasionally see ex-patients."

He watched her appreciatively as she went inside. The way she walked, you'd think she had a special audience. Presently the door opened and she came back, batting her eyes vigorously.

"You can go in now," she said huskily. Strange, her voice had dropped an octave in less than a minute. "The old boy tried to pretend he was in the middle of a grave emergency."

On his way in, he miscalculated, or she did, and he brushed against her. The touch was pleasant, but not thrilling. That reaction seemed reserved for Erica.


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"Glad to see you," said Doctor Crander behind the desk. He was nervous and harassed for so early in the morning. "The receptionist didn't give me your name. For some reason she seems upset."

She did at that, he thought—probably bewildered by his appearance. The hospital didn't seem to have a calming influence on either her or the doctor. "That's why I came here. I'm not sure who I am. I thought I was Dan Merrol."

Doctor Crander tried to fight his way through the desk. Being a little wider and solider, though not by much, the desk won. He contented himself by wiping his forehead. "Our missing patient," he said, sighing with vast relief. "For a while I had visions of . . ." He then decided that visions were nothing a medical man should place much faith in.

"Then I *am* Dan Merrol?"

The doctor came cautiously around the desk this time. "Of course. I didn't expect that you'd come walking in my office—that's why I didn't recognize you immediately." He exhaled peevishly. "Where did you go? We've been searching for you everywhere."

It seemed wiser to Dan not to tell him everything. "It was stuffy inside. I went out for a stroll before the nurse came in."

Crander frowned, his nervousness rapidly disappearing. "Then it was about an hour ago. We didn't think you could walk at all so soon, or we would have kept someone on duty through the night."

THEY had underestimated him, but he didn't mind. Of course, he didn't know how a patient from the regrowth tanks was supposed to act. The doctor took his pulse. "Seems fine," he said, surprised. "Sit down—please sit down."

Without waiting for him to comply, Crander pushed him into a chair and began hauling out a variety of instruments with which he poked about his bewildered patient.

Finally Crander seemed satisfied. "Excellent," he said. "If I didn't know better, I'd say you were almost fully recovered. A week ago, we considered removing you from the regrowth tank. Our decision to leave you there an extra week has paid off very, very nicely."

Merrol wasn't as pleased as the doctor appeared to be. "Granted you can identify me as the person who came out of regrowth—but does that mean I'm Dan Merrol? Could there be a mistake?"

Crander eyed him clinically. "We don't ordinarily do this—


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but it is evident that with you peace of mind is more important than procedure. And you look well enough to stand the physical strain."

He pressed the buzzer and an angular woman in her early forties answered. "Miss Jerrems, the Dan Merrol file."

Miss Jerrems flashed a glance of open adoration at the doctor and before she could reel it in, her gaze swept past Dan, hesitated and returned to him. Her mouth opened and closed like that of a nervous goldfish and she darted from the room.

*They see me and flee as fast as they can caper,* thought Merrol. It was not wholly true—Crander didn't seem much affected. But he was a doctor and used to it. Furthermore, he probably had room for only one emotion at the moment—relief at the return of his patient.

Miss Jerrems came back, wheeling a large cart. Dan was surprised at the mass of records. Crander noticed his expression and smiled. "You're our prize case, Merrol. I've never heard of anyone else surviving such extensive surgery. Naturally, we have a step-by-step account of everything we did."

He turned to the woman. "You may leave, Miss Jerrems." She went, but the adoration she had showed so openly for her employer seemed to have curdled in the last few moments.

Crander dug into the files and rooted out photographs. "Here are pictures of the wreckage in which you were found—notice that you were strapped in your seat—as you were received into the hospital—at various stages in surgery and finally, some taken from the files of the company for which you worked."

Merrol winced. The photographic sequence was incontrovertible. He had been a handsome fellow.

"Here is other evidence you may not have heard of. It's a recent development, within the last ten years, in fact. It still isn't accepted by most courts—they're always lagging—but to medical men it's the last word."

MERROL studied the patterns of waves and lines and splotches. "What is it?"

"Mass-cell radiographs. One was loaned by your employer. The other was taken just after your last operation. Both were corrected according to standard methods. One cell won't do it, ten yield an uncertain identity—but as few as a hundred cells from any part of the original body, excepting the blood, constitute proof more positive than fingerprints before the surgical exchange of limbs. Don't ask me


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why—no one knows. But it is true that cells differ from one body to the next, and this test detects the difference."

The mass-cell radiographs did seem identical and Dr. Crander seemed certain. Taken altogether, the evidence was overwhelming. There had been no mistake—he was Dan Merrol, though it was not difficult to understand why Erica couldn't believe he was her husband.

"You did a fine job," he said. Recalling the picture of the wreckage, he knew they had. "But couldn't you have done just a little better?"

CRANDER'S eyebrows bounced up. "We're amazed at how well we have done. You can search case histories and find nothing comparable." His eyebrows dropped back into place. "Of course, if you have a specific complaint . . ."

"Nothing specific. But look at this hand . . ."

The doctor seized it. "Beautiful, isn't it?"

"Perhaps — taken by itself." Dan rolled up his sleeve. "See how it joins the forearm."

Crander waggled it gravely. "It coordinates perfectly. I've observed you have complete control over it. The doctor's eye, my boy. The doctor's diagnostic eye."

The other just didn't understand. "But the size—it doesn't match my arm!"

"Doesn't *match?*" cried the doctor. "Do you have any idea of the biological ways in which it *does* match? True, it may not be esthetically harmonized, but here we delve into the mysteries of the human organism, and we can hardly be striving for Botticelli bodies and Michelangelo men. First, your hand moves freely at the joint, a triumph of surgical skill." He moved the hand experimentally, to show Merrol how it was done. He dropped the hand and hurried to a screen against the wall.

Crander drew his finger across the surface and the mark remained. "You know about Rh positive and negative blood. Mixed, they can be lethal. This was discovered long ago, by someone I've forgotten. But there are other factors just as potent and far more complex."

He scribbled meaningless symbols on the screen with his finger. "Take the bone factors—three. They must be matched in even such a slight contact as a joint . . . this was done. Then there are the tissue factors—four. Tendon factors—two. Nerve-splice factors—three again. After that, we move into a complex field, hormone-utilization factors—seven at the lastest count and more coming up with further research.


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"That's the beginning, but at the sensory organs we leave the simple stuff behind. Take the eye, for instance." Merrol leaned away because Dr. Crander seemed about to pluck one of Dan's eyes from its socket. "Surgical and growth factors involved in splicing a massive nerve bundle pass any layman's comprehension. There are no non-technical terms to describe it."

IT was just as well—Merrol didn't want a lecture. He extended his arms. One was of normal length, the other longer. "Do you think you can do something with this? I don't mind variation in thickness—some of that will smooth out as I exercise—but I'd like them the same length."

"There were many others injured at the same time, you know—and you were one of the last to be extricated from the ship. Normally, when we have to replace a whole arm, we do so at the shoulder for obvious reasons. But the previously treated victims had depleted our supplies. Some needed only a hand and we gave them just that, others a hand and a forearm, and so on. When we got to you, we had to use leftovers or permit you to die—there wasn't time to send to other hospitals. In fact there wasn't any time at all—we actually thought you were dead, but soon found we were wrong."

Crander stared at a crack in the ceiling. "Further recovery will take other operations and your nervous system isn't up to it." He shook his head. "Five years from now, we can help you, not before."

Merrol turned away miserably. There were other things, but he had learned the essentials. He was Dan Merrol and there was nothing they could do for him until it was too late. How long could he expect Erica to wait?

The doctor hadn't finished the medical session. "Replacement of body parts is easy, after all. The big trouble came when we went into the brain."

"Brain?" Dan was startled.

"How hard do you think your skull is?" Crander came closer. "Bend your head."

Merrol obeyed and could feel the doctor's forefinger slice across his scalp in a mock operation. "This sector was crushed." Roughly half his brain, it appeared. That's why so many memories were gone—not just from shock. "In addition, other sectors were damaged and had to be replaced."

Crander traced out five areas he could feel, but not see. "Samuel Kaufman, musician — Breed Mannly, cowboy actor — George Elkins, lepidopterist—Duke De-


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Caesares, wrestler—and Ben Eisenberg, mathematician, went into the places I tapped."

Dan raised his head. Some things were clearer. The memories were authentic, but they weren't his—nor did the other wives belong to him. It was no wonder Erica had cringed at their names.

"These donors were dead, but you can be thankful we had parts of their brains available." Crander delved into the file and came up with a sheet.

"Here are some body part contributors." He read rapidly. "Dimwiddie, Barton, Colton, Morton, Flam and Carnera were responsible for arms and hands. Greenberg, Rochefault, Gonzalez, Tall-Cloud, Gowraddy and Tsin supplied feet and legs."

HE was not a man, Merrol thought. Not now. If anything, he was a convention and one body was not a large enough hotel to hold it in comfort.

"These were the major human donors, but there were others I didn't bother to read, for the kidneys and so on. And I think our four-footed friends deserve some mention." He looked up. "The skin on your face is from a pig embryo."

That explained why it was hard to shave. "*Oink?*" he said. "I mean did it have to be a pig?"

"You'd be surprised how hard it is to transplant human skin," commented Crander. "Besides, we wanted to give you a masculine look. The finest face there is, genuine pigskin."

Merrol felt like a wallet.

The doctor droned on through the list, but Merrol scarcely listened. Only once did he interrupt, to ask incredulously, "Did you say a *horse?*"

"Is there anything wrong with a horse?"

Merrol thought back. Come to consider it, there was nothing wrong — in fact, compliments were more in order.

"The skill that went into matching the unrelated parts that are now you is a landmark in medical history, quite comparable to Harvey's discovery of the circulation of the blood," said Dr. Crander. "I wouldn't believe it if I hadn't participated in it myself. There have been limb and brain replacements before, but never on such a scale. One of these days, we'll get out a report that will astound the medical world."

Without doubt, it would. Merrol tried to feel grateful, but gratitude refused to come. They had saved him—but was it worth it?

Puzzled, Crander frowned at the buzzer. He'd been pressing it intermittently for the past few


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minutes. "Doesn't seem to be working," he muttered, heading toward the door through which Merrol had entered. "Wait here —I'll be back. I have to cancel an appointment."

As soon as the door closed, a voice behind Merrol hissed. "I fixed the buzzer. He went for the guards."

He whirled. Miss Jerrems stood in the doorway that led into the filing room on the opposite side of the office. "Guards?" he repeated.

"Of course—guards for the violent patients."

"What does that have to do with me?"

"You escaped once, didn't you?"

He hadn't escaped, he had merely walked out when he felt he could. Did that qualify him as violent? It might. "What of it? I'm no longer a patient. The doctor said I had recovered."

"That's what he said to *you*. But even if he means it, there's always psychotherapy, post-regrowth orientation."

Orientation—he hadn't thought of that. They'd want to keep him under observation for several days and he had no desire to stay hospitalized. Erica would come to the hospital in a few hours. Perhaps she was there now, waiting to see someone. Come to think of it, he had got past the receptionist with remarkable ease. At any rate, if she was insistent about it, she must eventually get to see the evidence he had just studied.

And then there would be orientation—for both of them.

Without doubt, he would be taught to accept himself as he was, and Erica would be trained to look at him without laughter, and together they would know that beneath his piebald exterior lurked a lovely personality. Then, well adjusted, they would go home and live happily ever after. Or would they?

"Don't stand there, if you want to get away," Miss Jerrems whispered urgently. "Next time they won't take any chances."

They wouldn't. He would be confined to a room he couldn't break out of with guards disguised as nurses. Blindly he moved toward the door.

"Not there," she exclaimed. "Do you want to walk right into them? This way. They won't look for you in here." She clasped his hand in her bony fingers and led him through the maze of files to an elevator. "This takes you to the ground floor," she said. "Once outside, you can get away."

He probably could—it was a large building and it would take a prolonged search to determine


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that he was not inside it.

She smiled peculiarly, clearing her throat. "Thirty-seven Brighton Drive."

Mechanically he repeated the number. "What is it?"

"That's where you can find out."

"Find out what?"

"What they did to you here. I can't tell you now," she whispered nervously. "Oh, *do* hurry!"

If he had to move fast, this seemed a good time. The elevator dropped him to the street level and, looking cautiously around, he walked out. In a few minutes, he was blocks away. It was mid-morning, and he swung along, hands thrust into his jacket. There was a wad of paper inside and he fished it out and examined it—money, neatly folded with a note around it.

The note was from Erica, saying that the money was meant for him. The sum was not great, but she must have given him everything she had in the house. Mistily, he counted it out.

## III

DAN hadn't been stopped and didn't expect to be. He wasn't a criminal, but until the hospital released him, he was technically a mental case. But Crander would hardly be anxious to report to the police that a patient

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was missing—not until he had tried everything else.

Merrol took the elevator. It was a bright new apartment building, which conferred some social status and not much else on those living in it.

Miss Jerrems opened the door. "Come in," she said, looking around furtively as he slipped past her.

He sat down gingerly, watching her scurry about. He tried to protest, but nothing he said had any effect on her aggressive hospitality. She thrust a cup of watery coffee in his hand and placed a tray of breakfast rolls beside him.

She sat facing him. Their knees almost touched—it was a narrow room. "I came home at once," she said, not very successful in her attempt to control her excitement. "I told them I was upset and, after my long years of service, they didn't question me. I tore my dress and told them you had done it. I said that you ran up toward the top of the building."

He appreciated her motives, but thought she shouldn't have tried so hard to convince them. Now they had reason to think he was violent.

"Until today, I've been devoted to Doctor Crander," she said sternly.

He recalled the first look on her face in the doctor's office—and the one after she had seen him. In seconds, her whole attitude had changed. Why?

"I heard what he told you." She hissed the word—"Lies."

Dan stared at her skeptically. "They didn't do what he said?"

"Oh, the facts were straight enough," she said bitterly. "It was the reasons he concealed. They thought you didn't have a chance, so they did all sorts of strange things they never tried on anyone else. You were an experiment, that's all—but you surprised them."

The hospital was looking for the wrong mental case. They had one working for them and didn't know it. He didn't doubt that she was right—about his being an experiment—but her observations were wrong. It was due entirely to their unorthodox procedures that he was alive.

She looked him over carefully and he knew that the halves of his face didn't match by a ridiculous margin, that one shoulder was heavier than the other, that his hair was in three colors. Even in repose and fully clothed, so that some of the discrepancies of his physique were hidden, he was hardly presentable.

"When I saw you standing there today, I realized what they had done to you and my loyalty to the institution and the doctor


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vanished," she said earnestly. "And the psychotherapy isn't to help you, it's to make sure you won't protest over what they've done. That's why I had to get you away. They've ruined you and now *you* must ruin *them*."

He had half-suspected it would come to this—but he hadn't been sure. "I don't want to ruin them," he said slowly. "I'd rather be alive, even as an experiment. And if you're thinking of a malpractice suit, you saw the files. I couldn't win against that."

"I ought to know about the files—I worked on them." Her eyes sparkled and her voice lowered. "What if the evidence is missing?"

HE sat back. With her cooperation, the vital parts of the file could vanish and, with that gone, he could collect a staggering amount from the institution. He had only to appear and no jury or panels of experts would decide against him. Is that what she had planned so swiftly in the director's office—that she would share the money with him? Somehow, he couldn't believe money meant that much to her. "I can't permit it," he said. "In spite of everything, I feel obligated."

She flung herself across the narrow space. "I expected you to be noble," she sobbed. "One look at you, and I knew I had met the loneliest person in the world."

Like called to like, at least for her, and that explained why she had grimaced when she had first seen him. It was her counterpart of the receptionist's reaction. It explained, too, why she was willing to turn against the doctor she had previously adored. As for the money, she didn't want it for herself, but as bait for him—and he'd have to take her with it.

She had guessed wrong on all counts. He would have thrust her away, but it would have been too cruel. He tried to comfort her, and she dried her eyes on his shoulder. "Darling," she sniffled. "I've never yielded to any man, but if it will help you . . ."

She pressed close and he couldn't get away without breaking through the thin walls of the cramped apartment. He had never known a female form could be shaped around so many bones. "These things take time," he said, though they didn't. "Let's not rush into anything we'll regret." He seemed to arouse the motherly instinct in some women, if only in the future tense.

Presently, she sat up, blowing her nose and looking ardently at him through tear-rimmed eyes. "You can stay here. You've no place else to go, and they'll be looking for you."



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"Well," he said—but it was true. He shouldn't be wandering on the streets.

He slept that night on a sink that converted to a bed. It would have been more comfortable unconverted.

HE crept out in the morning before she was awake. He paused outside to scribble a note, principally to throw her off his track. You never could tell with so unstable a person. Implicated in his escape, she might nevertheless report to the hospital. He shoved the note under the door and left quickly and quietly.

His first move was to buy a hat, which entailed further trouble. The doctors had overcompensated in replacing the missing brain tissue and, in piecing a skull together, had constructed an outsized head on which nothing seemed to fit. By careful shopping, he found something that did fit and, when he'd clapped it on, he happily noted it concealed the tricolor hair . . . one item less to attract attention.

He ate and afterward walked to the rocketport. It was a long distance and formerly he might have complained, but now he didn't mind it. The miles seemed to have shrunk to furlongs.

He found the big *Interplanet* sign and examined the place minutely from the outside. Once he had worked there, technically he still did. Some memories came back, but not many. He needed at least an hour inside to enable him to forget the hospital and its psychotherapy.

Once cleared, he would be free for a while to concentrate on what to do about Erica.

The hospital evidently had yet to call in the police, He was still safe on the streets, but the medicos must have notified *Interplanet* and all other places at which he might show up. However, the company was too big for everyone to know about him this soon. More likely there would be only a few who could have information on him as yet. The trick was to bypass those individuals who might try to detain him and still get where he wanted.

Normally, he'd go to the front office after an accident. This time, he went to the side gate and when the guard looked at him questioningly, mumbled, "Reporting for duty." Which got him through.

Inside, there were more memories awaiting him. Depending on them, he walked rapidly through hall after hall and finally found the desk he sought. The man behind it looked up. "Are you sure you're in the right place?" he asked.



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Merrol would soon know. "Reporting for duty," he stated.

This reply elicited a puzzled expression. "The devil you are. We haven't hired anyone new."

"I'm not new. I've been injured, and this is my first time back. Dan Merrol's my name."

"Okay, where's your slip?"

"Slip?" he asked, stalling. This was something he ought to know about, but didn't.

"Sure, the release from the front office after an injury."

"They said they'd send it down," he replied, holding his breath.

THE clerk pawed through the stack. "They don't send nothing down," he growled. "I'll call and find out." His hand reached out and then he relaxed. "No use bothering them, it'll get here tomorrow." He looked up and laughed. "Red tape," he said by way of explanation. "Why should I doubt you? If you said they released you, then they did."

Merrol was glad to see one man who wasn't impressed by office routines. Still, his behavior was a little puzzling.

The man screened on. The communication unit was behind the desk, tilted so he couldn't see it. The volume was low, but Dan could hear the conversation from this end. "Got a case for you. Name is Dan Merrol. I don't know, he's before my time."

The reply was faint and Dan didn't catch it. But the clerk added, "He seems okay. What? Sure he's got a release. Would I send him in?"

He cut the connection and looked up. "Go over to Psych. They'll test you. If you pass, we'll put you back on schedule." He started to turn away and saw Merrol standing there. "What's the matter?"

"I don't know where Psych is."

"I see. We must have moved things since you were here." The man got up and pointed. "Down there and turn left at the second corner. You can't miss."

The examiner was scanning a card as he entered. "Lots of experience," he commented. "We'll pass over the written stuff. That's for kids, to make sure they've studied their lessons. After you've been out this long, you can almost feel a course faster than anyone can figure it."

It was a relief. Merrol didn't know how much theory he remembered, but was sure he could still lift a ship as well as the next man.

The examiner made a notation on the card and tossed it into a machine that snapped it up and clicked furiously over it. "Let's take the biggest thing first, if you're up to it."

"I feel fine." It was not true,


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but it was the customary answer. Anything else, and he'd be shunted off into a series of meaningless tests, each designed to verify the results of previous tests. An ingenious scheme rigged up by the psych crew in their spare time to see how complicated they could make any given system. Answered straightforwardly, they rushed a man through with a minimum of officiousness.

"Okay, let's take the trip."

He accompanied Dan into a room unlike the others. For one thing, it might have been the control room of a ship. Forward, there was the usual clear view. The stars were there too, in an adaptation of the planetarium. Outside, arranged to give any effect from top acceleration to free fall, were a number of gravity coils. Except for the pilot—and Merrol would play that role—there was a full complement of officers who were invisible.

THE tester flicked on a machine. "I'll give you Mars, because that's your usual run. This is a short drive, because you're in a favorable position. Got it?"

Merrol nodded and climbed into the seat, facing the instruments.

"I've turned on the best crew simulators, better than you'd ever actually get. Don't worry about them, just take the data and flit the way you think you should." The tester clamped a mike inches away and adjusted the visio-recorders firmly on his head, where electron beams could sneak in and tap his optic centers. "The first trip after you've been away is rough, but you'll make it."

Merrol strapped himself in and hoped the other man was right.

The examiner went to the door, turned and grinned. "Watch out for the interplanetary goose," he called and snapped the switch.

Merrol was now in a ship. In the back of his mind there was some doubt of his ability, but it didn't reach as far as his fingers. Rockets vibrated beneath him. Outside, he could see the glazed earth-slick. He touched the power and climbed above the clouds. The sky turned black and there were stars.

He checked position. The tester had given him a setup. The Moon was out of the way and the run to Mars was the shortest on record. If he couldn't handle this, he wasn't a pilot.

The seat jabbed him suddenly. That's what he'd been warned about—he'd been expecting it and still wasn't prepared. The tempathy drugs flooded into him and the needle was withdrawn.

Takeoff and landing were always rehearsed on the pilot's own time. The ends of a voyage were critical and it was essential to


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have an undistorted reaction. Besides, neither took long.

The time between one planet and the next was long and nothing much happened, so it could be shortened without deleterious effect on the results. Tempathy drugs shortened it, though not completely. Part of a man's consciousness went along at normal speed and the rest, that which counted in jockeying rockets, was enormously telescoped.

It telescoped on Merrol. He couldn't see. Rather, part of him could but, for the other fraction, images passed in front of his eyes too fast for his mind to evaluate. Weeks flipped past in minutes. It was a dream world turned inside out—the roles of consciousness and unconsciousness were reversed.

There was something wrong with the sounds he half-heard. He could get emotions, though he couldn't separate them into sense. There were additional voices that shouldn't be there—the mechanical crew spoke to him giving silent data—but there were other actual voices, fearful or consolatory. He tried to speak, but his vocal cords were preempted.

He was doing it all, speaking, moving the controls, directing the ship between planets. It ought to be easier than takeoff, but it wasn't. He shouldn't be afraid of anything he might find out there —which was nothing—but that didn't alter conditions. He was profoundly disturbed, and he hoped the tester noticed it.

The examiner did spot trouble. He opened the door and reversed the switch. Lights went on, and another needle speared him, counteracting the effects of the tempathy drugs. Slowly the ship disappeared, space along with it, and the room whirled back into view and settled down. Something handed him back his eyes and ears.

"Easy," said the man. "Sit there. You don't have to move. We'll find out what's wrong. It may not be serious at all."

UNHOOKING the visio-recorder, the tester also swung the mike away. "You were doing fine," he said. "Never saw anything smoother. About here, though, you seemed to be having difficulty. We'll slow it down and see what it was."

He snapped the reels in place and darkened the room. On the screen was the vision-port and, through it, a view of Mars. A fleck of light glittered, grew, became a cloud, a swarm. A swarm?

"God!" said the tester, bewildered. "A billion butterflies! How could you imagine butterflies, twenty million miles from a planet?"


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Merrol squirmed — he didn't know either. What was wrong with him to make him dream up butterflies?

The examiner switched the film off and the lights on. "So you missed them — why, I don't know." He fiddled with another machine. "We'll slow down the sound, synchronize the two of them later, but maybe by itself the sound will give us a clue as to what happened."

"What's that?" It came from the sound track, but it was Merrol's voice.

"Those are lepidoptera." Another voice, also his, though of different pitch and timbre—his, because he was the only one there to speak. "I've always dreamed of discovering a new species and at last I have, since these can fly through space. What strange adaptations they have made. Aren't they beautiful?"

He answered. "They won't be when I plow through them. The rockets will fry them."

"Turn aside!" shouted the lepidopterist. "You can't destroy them."

"I'm going to act as if this were not happening," said a cultured voice. "*Bang-bang!*"

"This is upsetting," said a different person. "Since I have no instrument, I'll listen with my memory to a Bach concerto. Unfortunately, it ends in the middle of the third movement, as though it has been sliced through with a knife that separated one note cleanly from the next. Still, it's better to have this than nothing."

"Your computers are awfully slow," said the fifth. "I'll figure out a new course for us."

"Gimme the controls," said the wrestler. "I'll turn the ship, if I hafta do it with my bare hands."

The examiner snapped off the sound and busied himself with things that may have been necessary. "You don't have to sit there," he said after a while. "Wait outside." He glanced down, "Be careful when you move, the control column will fall off. Didn't know it could be broken."

As he got out of the seat, the examiner slapped his back. "Tell you what, fellow—don't wait—go now to the Compensation Board and see about retirement."

## IV

MERROL sat in the room where he had been sitting for a day and a half since the psych test. He had walked out immediately, found a room and was still in it. It wasn't comfortable, sitting. Whichever position was right for the bend of one knee was wrong for the other.

He had depended on the test to get him out of a jam, but the


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stratagem had failed. If he had passed, he'd have been another experienced pilot for the *Interplanet* string and that meant something. Experienced men were valuable and I. P. would have gone to bat for him.

Not everyone could pass the test and, while it didn't prove that the man who did was one hundred per cent sane, it was a big argument in that direction. It was evidence that would have to be respected publicly, whatever private doubts a psychotherapist might have.

Unwittingly, he had provided additional ammunition against himself. When the results of the test sifted through the layers of red tape to the front office, *Interplanet* would contact the hospital, which would then really want to orient him to a frazzle.

Orientation sounded nice but it was not for Merrol. If they could orient everyone he would come in contact with as well—but how much insulation could a man build up against involuntary laughter? It was fine to be a comedian on the screen and then step out of character and relax—but what if you couldn't stop? Nobody could adjust to the constant expectation of hysterical mirth. But wasn't that a reason to undergo psychotherapy, so they could blunt the edges of his own reactions? It ought to be, but somehow it wasn't. He didn't dare submit.

There was a difference, apparently determined by sex, in the way people behaved toward him. No man had thus far done more than smile respectfully while he was near. What they did later, he could guess. Face to face, they seemed to be reserved and incredulous until they learned to accept him as a member of their species and sex and then—how *did* they act? It would take more than casual thinking to puzzle *that* out.

Women saw the big joke instantly and giggled, and he couldn't blame them. Seconds later, they smirked contritely and tried to touch him, as if contact could atone for their behavior. *They* noticed appearance at all times, whereas men didn't as a rule of their own sex.

He paused to re-examine his thoughts. Something seemed to be missing in his analysis. What it was, he couldn't tell. It would have to come out later, as he mingled more with people—if he ever did.

AND that wasn't all. He had been a pilot, but never would be one again. His skill had been destroyed by the intrusion of five other personalities, who each brought his own odd bit of useless knowledge to the whole Mer-


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rol. He should have expected it, but he hadn't, nor had the doctors.

It was obvious—the brain slices that had replaced his own damaged tissues had to be in healthy condition or they'd never have functioned properly—and what did those medical fools think was the function of any brain? He was in command of the group brain because his was the dominant fraction, but when he sat down and thought about it, what good did it do? He was sitting down and it didn't do any good, so he got up.

He took two paces across the room and looked out the window, into windows that looked into his. Compensation was coming to him. Ultimately, he'd divide it with Erica and go away. She must know by now that the man she had spent the night with was actually her own husband. Intellectually she must have decided to accept him.

He wasn't noble, though. Much as he wanted her, he knew he couldn't live with anyone who had to stifle her laughter when he stepped out of the bath or into bed.

He walked the carpet aimlessly until, through the window, he caught a word from the telecast in the next apartment. He thought it sounded familiar. He yanked the louvers closed and grunted, but it didn't help—the word bothered him. He reached out the long arm to turn on his own screen.

A face came into view and a man's voice whispered. Merrol turned up the volume, but it didn't get any louder. It was the low-pressure soothing type. Whatever he was selling, it was a welcome change.

The announcer smiled reassuringly. "Actually, I'm talking to one person. The rest of you may listen or not for the next five minutes, after which I'll have something to say to you." It was a clever approach to insure that the audience didn't switch programs.

"Dan Merrol, this is a personal message to you." Merrol sat up.

"We'd call you if we could, but this is a large city and you've simply vanished. We have operatives trying to trace you, but with no success up to now." The announcer leaned forward confidentially.

"Now, Dan, before you become alarmed, let me say you've done nothing wrong. In fact, at *Interplanet,* we think you've done everything right—but I'll come to that later."

INTERPLANET? Then it wasn't the hospital or the police. What could I. P. want of him?



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"No doubt the test you took was somewhat of a shock. Don't blame the psych examiner for the conclusions he formed—he can't be expected to know more than the leading psychologists. You're probably curious as to what this test has to do with you and *Interplanet*. We hope so—we want you to keep on listening.

"The test proved you're no longer a competent pilot—but it also indicated something much bigger. Dan, *you* are the answer to a problem that has been bothering us for generations. Before the accident, you knew nothing of music or any life science, your math was adequate but not deep, you often felt awkward in the presence of others when you had no need to and you lacked confidence in your physical ability.

"Suddenly, you gained something of each and, when we contacted your doctors, we were able to surmise how it happened. Now you ask—what good does this do you and what is the problem to which this is the answer?

"Simply this — *specialization*. You know what constitutes a rocket crew—pilot, radio man, engineer and several lesser technicians, each of whom knows only his own job. Although you'll never sit at the controls again—through you, we can help others."

The announcer lowered his voice now. "You can unlock specialization for us. In the future, each man will concentrate on what particular aptitudes he has, then share it, via surgery, with others whose knowledge complements his own. To do this, we need to study you further and, of course, we'll pay you well for the opportunity. In addition, you'll still get your compensation. Please come and talk it over with us.

"Frankly, we're a little worried about what you may be thinking. If you have any thoughts of self-destruction because of what must seem a strange condition, put them aside. You're much saner than the average man."

MERROL listened, smiling at the remark. No matter what they thought, he couldn't seriously contemplate suicide. There were too many others to dissuade him.

Nevertheless, it was hard to understand and accept the sudden change of his status. He had formerly been a mere employee, but now . . .

The announcer hadn't finished. "In the beginning, Dan, I said you had done everything right, whether you knew it or not. After we learned what we did from your test, we checked through our files and found that we had a few other accident cases on record


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in which part of the brain had been replaced. In each case there was a faint trace of another personality, which we could detect when we knew what to look for. We rechecked each person we could locate. Unfortunately, the latent personalities and their share of knowledge had been submerged beyond recovery by the rigorous psychotherapy the accident victim had undergone after surgery."

THE imaginary Wysocki's theorem of self-therapy. He never knew of anyone by that name, nor had he got it from one of the other five. But, however nonsensically he had invented it to express the needs he felt at the time, it was, in fact, not nonsense. When it came to that, who knew anything about six minds packaged together—and what could have been done to him in ignorance?

The announcer was finished talking to Dan Merrol alone. "Remember, all of you," he said briskly. "This man is neither a criminal nor insane. He *is* extremely withdrawn, as a result of unpleasant experiences. If you can induce him to come to *Interplanet,* or lead our representatives to him, you will receive a substantial reward. Here is his picture."

Merrol turned off the screen and scowled. He didn't like that last. He intended to take their offer, but he wanted to be free to walk the streets. He could settle that easily enough by just calling *Interplanet.* They'd send someone down to whisk him away. That would solve all his problems—or would it?

Certainly, it eliminated orientation or any form of psychotherapy. After what had happened to the others, the psychologists would be content merely to observe what went on in his mind. They wouldn't want to give him much privacy, but he'd have to insist on it. They'd listen.

This could be just a job, a very good job while it lasted—say three or four years—until they had learned all they need to know. Perhaps there would be other men blended more scientifically than he had been. But he could accumulate enough money to last the rest of his life, or perhaps turn his many new talents to something else. There were many things he would like to do, and he was ahead of everyone else now, even though in three or four years he would no longer be unique.

Except, of course, in his body.

And there it was again. Was there nothing he could do to get away from it?

He had no memory of Erica except for the one night, but it


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was enough to convince him. What would their future be like in what was sure to follow? After that broadcast, he would be a person of some note, but would that stop laughter? Would she wait until he left the room before she giggled?

He'd come to terms with *Interplanet,* but first he had to come to terms with himself . . . and he hadn't.

How good was his imaginary Wysocki's theorem? Could it take one last extension? He counted what was left of the money Erica had given him. It wasn't much, but with it he could leave the city. And he had to.

## V

IT was dusk when he slipped out of the room and later still when the plane lifted away from the station. It was an ancient jet, long since relegated to cheap overnight service where speed was not a factor and price was.

He knew he was taking a chance and half expected to be stopped, but apparently not many people had listened to the broadcast. Casual glances slid off him and didn't linger. Partly, he suspected, because he had pulled his hat over his face and thrust his hands in the jacket. He'd gotten away in time, but by the morning there would be people on the streets looking for him.

He stared at the approximation of a port. When this ship had been built, there was some feeling against the practice and so the row of picture tubes had been camouflaged as ports in the wall. There was a station selector switch, but none for *on* or *off*. He glowered at the picture at his elbow and turned to the least annoying thing he could find. Across the aisle, there were three other programs he could see distinctly. The one directly opposite was a repeat of the broadcast he had heard a few hours previously. He scowled and looked away. If it hadn't been a night plane, in which people sought sleep, he would certainly have been spotted. Apathy was his best protection. He hunched down in his seat and dozed off.

When he awakened, the familiar *Interplanet* program was at his elbow. He reached to change stations, then on impulse let his hand continue past the knob until he felt the ash tray. He unfastened the heavy article and poked it through the screen.

The glass broke, but only a few in the immediate vicinity heard it in the din. To those who stared at him, he presented a view of his back or the profile of his hat. They glanced at him indifferently, then looked away. Outside the orifice, where the


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tube had been in the outer of two walls, was an actual port. He gazed through it contentedly.

A finger tapped him. "Yes?" he said in a loud voice.

The man behind him leaned over. "I've been riding in this plane once a week for five years. I mean. would you mind if I looked out? I've never seen where I'm going."

"Glad to have you."

The man sat beside him and peered wistfully out. Below were lights, the patterns of cities, roads and towns and in the distance the glare of furnaces. There was also a current of cold air seeping from the space between the double walls. The man looked, shivered, turned up his collar and finally went back to his seat.

It was cold, but Merrol remained where he was. There was some satisfaction in asserting himself, but the satisfaction wore off and the cold didn't.

His attention was caught by the program which was flickering across the aisle. Doctor Crander —Merrol frowned. Did the hospital want him too? He listened intently. No, they didn't want him.

CRANDER sounded tired. "This is an emergency appeal and we'll need a wide response. We have in our care a person with a serious illness we can't diagnose. With so much interplanetary travel we can't determine what causes the disease. It may be an organism from a moon of Saturn or almost anything else.

"Our staff is working at top speed. We feel, if we can keep her alive for one week, she'll be out of danger. That is by no means a certainty, but a reasonably accurate forecast.

"We have a new theory, largely untested, but we hope it will work. Each person differs from the next and though, when we match limbs and organs, we try to take this into account, we never quite succeed in effecting a perfect biological match. As a result, the character of the blood changes, slightly but significantly. It's as if we had lumped together the various natural immunities of the component bodies and created an entirely new super-immunity."

Crander paused. "We need persons who have had five or more major replacements. By major, I mean hands, arms, legs or parts of them—nothing so trivial as ears, or a few feet of skin, or three or four fingers.

"It must be at least five, though more are correspondingly better. Nothing less—and please don't apply with only a minor replacement. Two donors have volunteered so far and we have



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fractioned and administered the blood of one with dramatic, if temporary, results. In a few hours, we'll have to use the second. After that, I don't know what we'll do."

Merrol stirred. He was deeply suspicious.

"Here's the woman," said Crander. "She needs your help."

The man across the aisle leaned forward and his head was in front of the picture. Merrol tried to see, but couldn't.

"It's up to you," said Crander as he faded from the screen.

Merrol tapped the man across the aisle. "Please repeat it."

The man glanced around and saw who it was. "Aw, you're the guy who doesn't like that stuff." He jerked his head at the broken screen.

The memory cell of the picture tube didn't have a long attention span. It could recall forty-five seconds of the past program and no longer. The broadcast might be repeated, or it might not. Did he want to wait?

He reached out his arm—the long one—and fastened onto the man's jacket, giving him a short rough shove.

"Repeat it, I said!"

The man looked down. He wasn't small himself, but it was a large fist. "Sure thing," he said, jabbing the repeat button. The scene was replayed.

"Thanks," said Merrol, letting go.

The man looked at his crumpled clothing. "Not at all," he muttered, sliding away against the wall. "Don't mention it."

THE woman was Erica. It was too much of a coincidence that, among so many millions in the city, she should be the one. The hospital and *Interplanet* were working together and now they had brought in Erica. How gullible did they think he was and how much had they offered her for this? It might not be money, though—they might have convinced her it was to Dan's own best interest that they get in touch with him immediately.

They were baiting him crudely and if they weren't, there were others who could respond as well as he. There must be hundreds in the vicinity, scores at any rate, who could qualify. There were enough without him, depending on how often the blood fraction was needed. Crander hadn't said. It was a trick and Erica wasn't ill—or if she was, she would be safe without him. He had to make up his mind before he saw her, and he couldn't. He clenched his hands, both big and little. He had stretched Wysocki's theorem too far and it had failed.

"I had a wife once." The voice startled him, but he sat still, hop-


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ing to hear it again. Maybe they would tell him what to do. "Not so slender as Erica. Rather bouncy, in fact, but I liked her. Pity she ran away with a coleopterist. Never could understand what she saw in him." The voice grew sad. "*Beetles!*"

"My advice is that wives are easily come by," said a theatrical voice, modulated for effect. "But before he shuffles off this mortal coil to the last roundup, every man should have at least one wife like Erica."

"I can't speak of wives or women," said the musician. "There's so little memory left, mostly music. But you've been subconsciously humming a tune for days—and I must tell you that Beethoven didn't write anything called Erica. The correct title is Eroica."

"One fall don't mean nothing, it's always the best two out of three. The way I see it, you gotta get up. Get close to them, hold them tight, or they'll throw you outta the ring."

"This is something that can't be figured. There are some odds no one can live by. You'll have to solve this one yourself."

He sat there, not moving. They were with him always, but sometimes they weren't much help.

The plane would land on the other side of the continent. He had little money, but he could get in touch with *Interplanet* and they would advance him the fare back. Unfortunately, such a move would take time. There would be schedules to juggle, to say nothing of the ride back. A mere matter of hours on a fast ship—yet what if that was too long?

HE got to his feet and went forward. "You can't go in there," said the stewardess.

He looked past her into the pilot's compartment. It was securely locked from this side though not on the other. He glanced down at the girl. It was a tradition that stewardesses were gorgeous creatures, though the tradition was simply not true any longer. In an age of space exploration, air travel had dispensed with glamor. But for unfathomable reasons, this stewardess was a throwback to the old days. If she didn't quite achieve real beauty, she came close enough so that no healthy male could conceivably object to her nearness.

Merrol could take the keys away from her, but she'd scream and a dozen men would come leaping to her rescue. He didn't care for the odds.

He had met three women and had he misjudged the effect of the new himself on them? First Erica—her behavior had been strange, considering that, even


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from the first, she must have doubted he was her husband. Then the receptionist—she *had* gone out of her way to get him into Crander's office when the latter was upset by the disappearance of a patient. And finally, the pathetic Miss Jerrems, who had thawed and would have descended to crooked schemes, had he encouraged her. Was this some form of pity or something quite different—or did it matter at all as long as they were not indifferent? There was a way to find out.

He raised his arm, the shorter one, and laid his hand affectionately on the stewardess' shoulder. "Isn't there a private room in back?"

She tilted her head and her lips glistened. "Yes, there is."

"Small enough for two?"

"I believe so." Her lashes trembled and lowered and she seemed surprised that they did. "That is if you—if we snuggled close."

"I'm sure we will. Why don't you find out about that room?"

"It seems like a good idea." She blushed and turned to leave.

"I'll need keys, won't I?" he said.

She leaned against him and the keys dropped into his hand. "I'll be waiting," she whispered. He watched her walk down the aisle and enjoyed the enticing sway of her hips. Under other circumstances, he might have considered joining her.

He had the keys! It had worked! He didn't know why, nor did he have time to think about it. He inserted the key and stepped inside.

"Hi, Jane," sang out the pilot, not turning, assuming he knew who it was.

Merrol located the autopilot switch and, reaching past the man, turned it on. With the same motion he whirled the pilot around. "Listen, friend, don't you want to go back?"

"No. Why should I?" The pilot was startled, but not intimidated.

"Engine trouble or something. You figure it out. I don't care what it is, as long as we get back." He half-hoped the man would object — physical action would be a relief. In an emergency, he could handle the ship himself—it was simpler than a spaceship.

THE pilot squinted beyond and behind him. "Engines don't sound so good," he muttered. He was unexpectedly docile. "Safety first is the motto of this airline." It was a good rule, but it was questionable whose safety he was referring to.

The pilot was still having unaccountable difficulty with his eyes—there was a marked tendency to cross. "Sure, we'll go


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back," he said. "Glad you brought it to my attention. But call off your gang, will you, mister?"

Merrol turned around. He was alone. There was no one behind him, though the pilot seemed convinced there was.

He had a partial answer to the pilot's strange reaction. He was a multiple personality and, normally latent, in times of stress the multi-personality became dominant and impressed itself psychologically on the observer. And if the mind received the impression of several men, the eye tried hard to produce evidence that would confirm it.

Not everyone was as successful at self-hypnosis as the pilot, but the temptation toward it was always there. Now that he thought of it, men never had laughed at him. Instead they had been respectful. He apparently had an unsettling effect on those of his own sex he came in contact with —just how powerful it was, he didn't know yet. The complete answer would have to await investigation by trained psychologists.

Women were different. They invariably laughed first—Erica too, in spite of the general sympathy she must have felt for him. In what did the difference lie? That too he would have to determine—later.

The pilot looked at him dizzily, beseechingly. Merrol decided he must be pouring it on, though he felt no different. "Remember, I can get up here in an awful hurry," said Merrol, "so no tricks." The pilot nodded and clung helplessly to the controls. He wouldn't cause any trouble. Merrol raised his arm in a gesture. "Come on, fellows."

As an afterthought, he locked the stewardess in the private compartment and, as he did so, he could feel the plane swing in a wide arc that would take them to the station they had started from. The apathetic dozing passengers didn't even notice.

And then all six of him walked back to his seat and Merrol sat down.

## VI

HE slid out of the plane while it was still rolling. He didn't want to argue with the passengers, when they found they were on the wrong coast and he was to blame. Nor did he particularly want to explain to the authorities. Later he would have to, but by then he would have powerful interests behind him to smooth over the incident.

It was late and there were no cabs in sight, in air or on surface. He crossed the landing strip into the station and out of it


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and swept along the dark streets with a loose-jointed stride that made the distance seem less than it was. Presently, he broke into a trot and his speed was encouraging.

A hoppicopter — one of the little surface cars that could rise and fly for a short time to avoid traffic jams—bounced down and rolled alongside. A window slid open and a head popped out. "In a hurry, mister?"

He bobbed his head. "Hospital."

"Jump in and we'll take you. We're not doing anything special —just riding around." The hoppicopter stopped. This was luck —he'd get there faster.

The man in the front seat opened the door and stepped out, flashing a light on him. "Just a check. We don't mind taking you, but we want to be sure we don't pick up some rough character."

The man didn't look so gentle himself—and the light was trained on Dan too long. If they were afraid, he'd have to refuse their offer and go on.

"Hey, Carl," the man with the flash called out puzzledly. "Haven't we seen this guy somewhere before?"

He should have expected something like this and not stopped—but maybe it would have been worse if he hadn't. So far, he had been lucky that no one had spotted him—and now was not the time to be discussing terms with *Interplanet*. He began to edge away.

Carl climbed out of the hoppicopter and circled in the same direction Merrol was inching toward. "I guess I have at that," said Carl slowly. He was a big man. "Can't say where, though."

Merrol breathed more easily. He couldn't make a break for it, but perhaps he wouldn't have to. They might not have seen the broadcast. "I've got to hurry," he said. "I'll go on."

"Don't get sore," said Carl soothingly. "We'll take you. Climb in."

The man with the light was frowning indecisively. "The guy on the broadcast?" he asked sharply.

"Nah," said Carl disgustedly. "That guy—you look at his picture and you have to bust out laughing. Now this fellow here—while he's a long way from handsome—is clearly the executive type, a man you can trust." Carl scrutinized him thoughtfully. Before Merrol could stop him, he reached out and plucked off the hat. "There's only one guy with three-colored hair, though, and you've got it," he said unbelievingly.

Merrol started to back away, but the body of the hoppicopter stopped him.


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"Mister, you've sure got some disguise," said the other man in an awed voice. "I could look right at you all day and not tell who it was."

IT was no disguise, it was the multi-personality again. No one looked quite the same in real life as in a picture, because the personality was missing. And with him the difference was far more marked. The camera could register his features accurately, but men couldn't, not when he was actually there to inspire trust and respect—and he did arouse those emotions. Added together, these were some of the reasons why he hadn't hitherto been recognized.

"Sorry to have bothered you," he said, pushing between them as they converged on him. "I'm in a hurry."

"Sure, sure," said Carl, apologetically, moving aside.

"But he's money!" the man with the flashlight cried in an anguished voice.

"So he is!" said Carl. The vision of money seemed to carry a lot of weight with him. He seemed reluctant to act, but he reached out and swung Merrol around. "We'll take you to *Interplanet* and then you can go to the hospital. Don't worry, we aren't going to do nothing. It don't *pay* us to hurt you."

Their original intentions were probably sincere, but now that they thought they'd found money on the street, they weren't willing to let it go. But Merrol was not going to accompany them to *Interplanet*. He jerked away.

"We'll split the reward," said Carl. "Too bad we got to carry him in."

Merrol tried to elude him, but Carl caught his arm in a bone-cracking hold. That is, it ought to have splintered bone. That it didn't was not due to lack of skill, but to the proportions of the arm to which it was applied. The advantage of leverage went to Merrol and he used it. He broke loose and swung the long arm with the large fist and Carl went down.

The man with the light dropped it, climbed on Merrol's back and was pounding away at a nerve. Had he found the nerve, Merrol might have crumpled to the street. He didn't find it, because it wasn't there. The nerve had been surgically rerouted.

Merrol peeled him off and tossed him on top of Carl. He tossed him harder than he meant to and neither man moved.

He climbed into the hoppicopter and rolled it through the dark streets. They had caused him to lose time and for this they would forfeit the use of their 'copter. They could pick it up in the


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morning, if they felt like claiming it. He got out and hurried into the hospital.

He met others in the corridors —it was a busy place in spite of the lateness—but the first person he recognized was Erica. "Dan!" she said. She didn't use anything scientific, but the hold on him was harder to break than judo. Perhaps because he didn't want to.

Later, he became aware of someone tapping his shoulder. He turned around. "These things can be consummated in the privacy of one's own home," murmured Doctor Crander. "But when a life is at stake, passion should be put aside."

The purely physical elation began to fade. He put Erica down, but uncertainly holding onto her. It was an ambivalent gesture. "Is this what you call an emergency?" he asked sarcastically. He had broken a number of minor laws and nearly his own neck in getting here. He had a right to be angry, though he was not sure how he felt.

The doctor gave him a scandalized look. "Do you think we're unethical? There is such a woman as we described, one of our staff. We do have other donors, but we think you can do more for her. In a fit of despondency, this woman wandered into the extraterrestrial room without the customary protection, hoping to catch something—and she did." Crander frowned. "The only way we altered facts was to use your wife's photo. It was her idea. Furthermore, it is true that a pretty girl gets a better response —and, of course, Erica wanted you back."

When he learned who the patient was, he was satisfied with his decision. After the blood fraction had been administered to Miss Jerrems, even his untrained eyes could see the improvement.

HE watched Erica suspiciously as she pattered about in a state of dishabille that did nothing to enhance her beauty but, perversely, made her more exciting. That she had been uncertain as to his identity the last time meant little and he could forgive it. Man and wife were not thereby distinct species, separate to themselves, unattracted or repelled by all others of the opposite sex. For himself, he had only to remember the stewardess.

But it was important to know what her true feelings toward him were. Laughter at the wrong time could be disastrous to a man's ego!

"This time, you know there's no mistake," he said, hoping that irony was some protection. "But are you sure you want me as a husband?"


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She stopped fiddling with her hair. She tilted her head and looked at him, at a body that defied the laws of anatomy and the face that belonged on a clown—except that a clown could take his face off. "Are you trying to get rid of me?" She was asking questions, not answering them.

Erica was examining him carefully and he could tell that she, unlike a male, saw each feature distinctly, saw the nose that had belonged to someone else and looked it, the jaw, originally very fine, but with contours that had since melted out of shape.

"I'm not trying to get rid of you," he said. "Maybe you want somebody nicer." He'd have to know before he could stop feeling tormented.

"Nicer?" she echoed. "Do you want me to answer that?"

SHE came and leaned against him. "A woman ought to have *some* secrets," she murmured. "But if you have to know, the first time I saw you I laughed, because you are funny. And after that, well, I saw traces of the nicest features of nearly every man I ever had a crush on. That was just the physical side."

She rested her head on his shoulder. "I didn't believe you actually were Dan. I didn't pay attention to a thing you said."

"But if you didn't believe . . ."

"Just what you're thinking," she answered. "I couldn't help it. You're the most exciting challenge a woman can have. Even if she doesn't know why, as I didn't then, it's still there—half a dozen men, and all of them in one monogamous package."

Now that she put it that way, he could see why she hadn't been able to resist. He could see that there were few women who could. He glanced at a framed photograph of the handsome pre-accident Dan Merrol that stood on the bureau. He thought, *Poor sucker!*

—F. L. WALLACE


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# A START IN LIFE

By ARTHUR SELLINGS

*What a problem for a robot . . . having all of the answers, but not knowing when to give them!*

Illustrated by SENTZ

"C-A-T spells Cat," said Em.

"But what *is* a cat?" said Paul.

"Why, here's a cat. Look at his big striped tail."

But Paul only pushed the book away petulantly. "I want a cat. A real cat I can pull the tail of."

"Cats aren't made for you to pull their tails," said Em. "Now, C-A-T spells—"

"Cat, *cat*, CAT!" he wailed, kicking his little heels on the floor.

Em hesitated, then returned to her task. "Very well. *The cat sat on the mat.* M-A-T, Mat. And here's a mat." She held it up. "A *real* mat."

Paul sniffed contemptuously and, with a child's unanswerable logic, said, "How can you say what a cat's made for and what a cat's not made for, if we haven't got a cat?"

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If Em had been human, she would have sighed. As it was, she wondered whether the child's question was good or bad. It was good because it showed power of reasoning; bad because it might get in the way of his studies. Helen now was different. She just listened and repeated the words, but Em was never sure whether she really understood.

"Why *can't* I have a real cat Em?" said Paul. "In the book, the boy's got a cat. Why can't *I* have a cat, a real alive cat, not one in a book? An alive cat, same as we're alive."

IN the web of Em's mind floated several thoughts. One was that she wasn't really alive—not *really*. And that brought the feeling of something a human would have called pain. It wasn't pain, though, but something worse, because a robot couldn't feel pain. Another was that it was bad enough as it was, having to teach them from books showing children in circumstances that they themselves knew nothing of; having to avoid their questions, putting them off and off—

"In the story Jay was reading me the other bedtime, they buyed a cat in a shop. Why can't *we* buy a cat in a shop!" He screwed up his face and added in a plaintive little voice, "And how do you *buy?*"

Really, thought Em, she would have to have a word with Jay and suggest that he be more careful about what he read to them. He was too good-natured, too easy-going.

"How do you *buy?*" Paul said again, tugging at her metal knee-joint.

"Well, it's giving something for something else. Like . . . " she floundered. It *did* involve giving something for something else. She'd heard the grownups mention it—in the days when there had been grownups. They had joked about it the way humans did joke, because here buying and—what was it?—selling had no meaning.

"It isn't important," she said.

"What's important?"

"That you learn your lessons."

"No, I mean what does *important* mean?"

"If you learn your lessons, you'll learn what important means." As she said it she realized it couldn't be very convincing, especially to a six-year-old. So she added hastily, "You'll learn what all the long words mean, and then you'll be able to read all the books there are. All the big books with long words in them."

To her surprise, the mention of big books did not brighten his eyes as it always had before.

"They're all lies!" he burst



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out. "I don't want to learn anything. They're all lies about things that don't happen. There ain't such things as cats and trees and—and . . . " He broke into bitter sobbing.

"Not ain't—*aren't,*" said Em, cursing herself the next moment. As if that really mattered when there were only the four of them. She reached out a hand to comfort him. But he shrugged it away.

"Come on," she said, trying to modulate her voice like a human, trying to be soft and gentle and comforting and knowing that she couldn't manage it. "We do have trees, anyway."

He looked up, his face flushed and indignant. "They're not trees," he retorted vehemently. "They're only a lot of old weeds. You can climb up *real* trees."

"I thought you said those were lies in the books about trees," she said. This time she did manage to get a whisper into her voice so that he would understand that she was only kidding him—she hoped.

But he only burst into a renewed fit of sobbing.

"THERE *are* trees," she persisted. "Leastways, there have been trees. And there will be again." She didn't like to think what the odds were against that, so she didn't. "I've seem them with my own eyes. You believe Em, don't you?" She put out her hand again, and this time he did not reject it. He threw himself into her hard, cold, metallic lap.

"Oh, Em," he sobbed. "Oh, Em!" But his tears now were not the tears of anger and separation, but of union in a common loss, so that Em, too, might have wept had she been human.

Instead she ran her clumsy, inadequate fingers through his damp blond hair, and said, "There, *there,*" but this time it was far too loud and mechanical, so she stopped talking and cradled him in her arms, rocking him till his weeping subsided.

She was still rocking him when Jay came back from the gardens with Helen.

Bursting through the doorway, Helen yelled excitedly, "Look what I've got. A flower! A real flower!"

"*Ss-sh,*" said Em in a whisper like a steam valve going off.

"Oh," said Helen, "can't I wake him to show him my flower?" She held the sickly yellowish bloom in front of her face.

"No," said Em, "he's tired. I shouldn't have given him an extra lesson." She turned to Jay. "What is this flower?"

"It just grew, Em," said Jay. "I found it in the beds along with the plants."

"Jay, is that the truth?"


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It wasn't conscience that made Jay shake his head, but knowing that Em *knew* the truth. "*I*—I planted a couple of seeds. One of the seed bags in the stores was split open and I found the seeds on the floor. It won't do any harm, Em."

"I thought we agreed that nothing like that must be touched. We don't know what might happen."

"Don't worry about it, Em. I read all about it in a book before I planted them. I thought the children ought to have something. They get so little—"

"Don't you think it's time to put the children to bed?" said Em warningly. She noticed that Helen had hidden the pitiful flower behind her back.

"Sure, sure," said Jay. "But about these seeds, Em. I thought perhaps we could . . . "

He faltered. Neither robot had anything like facial muscles with which to express a meaning without words, but the way Em was looking at him now—head lowered, shining eyes leveled at him from beneath her rounded brow—was warning enough.

"All right, Em. Let me have the boy. Come along, Helen. Bedtime."

But Helen did not turn. She looked up at Em. "I may keep the flower, Em, mayn't I?"

"Of course, Helen," said Em after only a moment's hesitation. If any harm had been done, it was done by now. "I'll put some water in a glass and you can have it near your bed. How's that?"

"Oh, thank you, Em, *thank* you!" She rushed over and clasped Em about the legs. Em lifted her gently up, but held her at arm's length. Otherwise, she knew, the child would kiss her, for she was more demonstrative than the boy. And the thought that she was all in the nature of a mother the child had to kiss—only cold unyielding metal—made Em feel inadequate. And whether she was supposed to be able to feel that or not, she did—and too often.

As she set Helen down, Em noticed the disappointed expression that always came when she had to frustrate her childlike impulses. But the look she gave Em before she turned to follow Jay was somehow different from any Em had noticed before.

EM stood there looking after her for quite a long time. In fact, she was still looking after her, standing in the same awkward, unhuman stance, when Jay returned. As he sat down, she sat down in the chair facing him. Sitting was another habit they'd long ago acquired from humans and not relinquished when the humans had died.



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Jay stirred. "Helen didn't want to hear a story tonight," he said.

"Oh?" she said. There was a long pause.

"Em," he said at last. "You're not really mad at me, are you? About the flowers, I mean."

"I think you're a fool, that's all," she said. "We can't afford to take risks like that. Germs, spores—we just don't know what might come from something new."

"But we inoculated them against everything, didn't we? Don't you remember, Em? Didn't I hold them when you put the needle in?"

"Oh, *stop* it," she said crossly. Of course she remembered. How could she forget? Those first years when there had been so many things to remember from the last hurried instructions. How to change and bathe babies with hands that had never been made for it. How to nurse them through the childhood ailments that came in spite of all the inoculations. How to teach things that had never been taught to oneself, because they'd either been unnecessary or built in.

Nervous breakdown couldn't happen to a robot, because a robot's system wasn't like a human's. But bringing up a human baby was an almost hopeless task for a robot, Em thought. One mental image had become a recurring and fearful one—the fantastic image of herself exploding under the strain, of cogs and springs and synthetic brain-cells flying in all directions.

THAT was the image that came back now to frighten and confound her.

It was different with Jay. She looked at him as he sat there, silent after the sharpness of her admonition. Her mind went back to the first days, the very first days before this great burden of responsibility had been laid upon them.

How carefree it had been then! The way, for instance, the humans had come to treat her and Jay like male and female. It was only coincidence that Jay's prefix made a man's name and hers a woman's. Being an earlier model, which accounted for the alphabetical precedence, he *was* clumsier, bulkier, squarer, while she was neater, smaller, more agile and more smoothly shaped. More delicate of voice, too. But besides, she had a quicker intuition than his, a more gentle manner and certainly a greater tendency to worry. It had been he who had joined in the jokes of the men, trying to understand them, dancing clumsy dances to amuse everyone when spirits were low. Meanwhile, she had learned to cook, although it was no more



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part of her job than dancing was his.

IN human company they had gradually assumed the positions of man and wife—he boasting sometimes of being older and more experienced, she slyly pointing out that that didn't make him necessarily wiser. He, since the last human grownups had all gone, thinking more of making the children happy—she of keeping them safe.

And, like a wife who knows she is more intelligent than her husband, she tried to use it by not demonstrating it too often. But now she felt she had to speak.

"If anything ever happens to them we'll be *alone*. I don't think you properly realize just how delicate human beings are."

"Of course I do, Em."

"And not only in their bodies," she went on, as if she hadn't heard him. "You'll have to be more careful what you read to them."

"Now what have I done?"

"Don't read them any stories about children having things *they* can't have. Stick to fairy stories."

"But there aren't many fairy stories. They know them all by heart by now. Anyway, humans wouldn't have had these books for the children if they were bad for them, would they?"

"*Oh, oh, oh!* Sometimes I wonder what goes on inside that big square head of yours. Don't you see that it wouldn't matter if they had their own mothers and fathers to tell them?"

"Of course I see. I just didn't think that—"

"Well, think, then," she said sharply.

He lowered his gaze. "I do think," he said after a pause. Then he looked up and said, "I think, for instance, that before long we'll just have to tell them. The truth, I mean."

"Why do you say that now?" she said, suddenly fearful.

"Oh, just things they say sometimes. The way they ask about the big door, the way their eyes stray toward it. Little things like that."

"I know," Em said at length, "but I'm frightened. Frightened about how they'll take it, about what knowing will do to them."

They were silent for long minutes. Then Jay said, "Can't *we* invent a fairy story? One big fairy story about everything, so that we never have to tell them the truth."

Em laid her metal hand on his. "Dear Jay. Can you invent even a *little* fairy story?"

He shook his head dumbly.

"And neither can I," said Em. "Even if we could, it wouldn't last long. It would only be one long evasion, instead of the little


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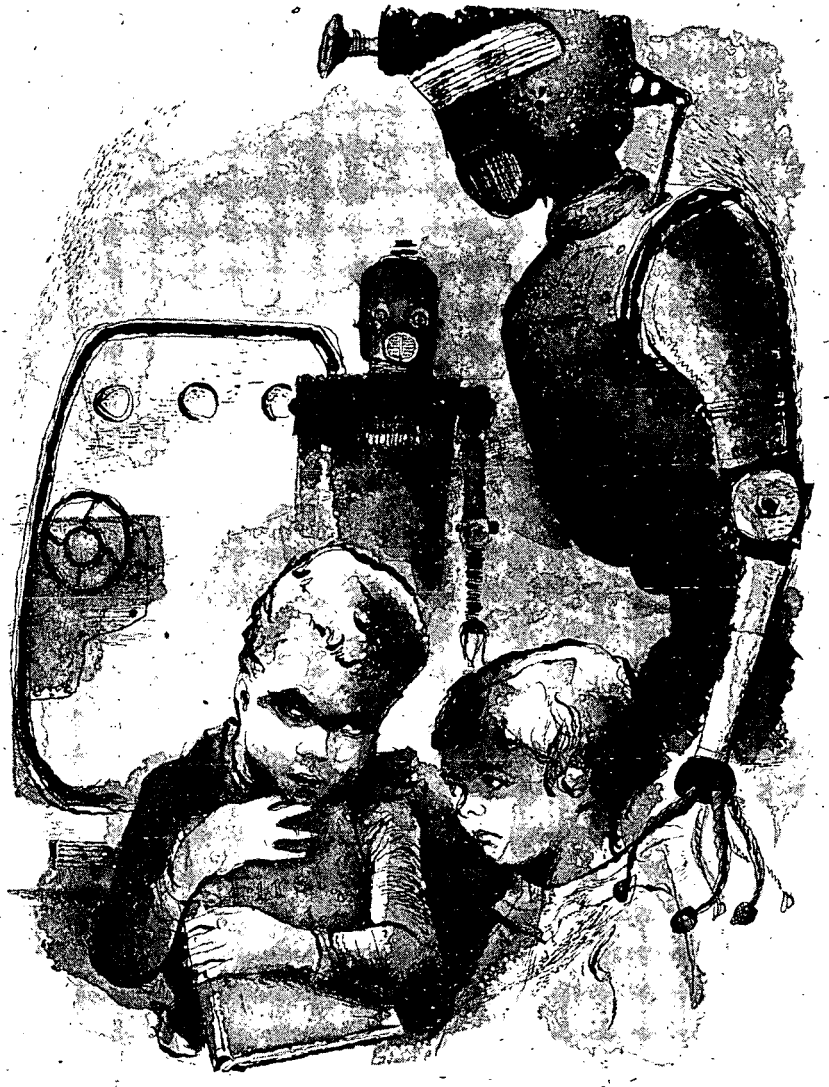


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evasions we make now. And anyhow, in two or three years they'll have the strength to open the big doors themselves. And we won't be able to stop them. They've got to learn by then. They should understand enough of the little truths so that the big truth won't be too great a shock to them."

"Well, for my part," said Jay, "I don't see how learning that C-A-T spells Cat or that two and two bolts make four would prepare them."

"Of course you wouldn't," she said and her tone was sharp again. Because she knew that, in his simple, direct way, he had come closer to the truth than she cared to admit. "It's a question of developing their minds. Disciplining them. Preparing them."

"It was only a thought," said Jay hastily. "You know best, Em. You always do."

BUT it became evident to Em before very long that one *couldn't* teach the small truths if one kept dodging the big one all the time. For the children's growing puzzlement blocked their will to learn.

They were still struggling through the first-year lessons of a five-year-old. Em studied the teaching manuals through the long hours while the children were asleep, trying to perfect herself as a teacher, trying to find out where she had gone wrong.

Their minds were keen enough. Their questions didn't abate. They became more subtle, more suddenly sprung in the attempt to get past the tightening mesh of their guardians' evasions. And it became increasingly clear to Em that each evasion was a step backward.

She tried answering their questions in meaningless polysyllables and, when they pressed for explanations, telling them that there was no easier way of putting it, that only by learning would they be able to understand. *That* device she gave up for they soon came to see through it. She could tell by the look that came into their faces—the by now familiar look of hurt mistrust.

The crux came when Paul asked a question she just couldn't avoid answering. It was a question that every child asks his mother sooner or later, but Em didn't know that. Her awkwardness when he suddenly asked her in the middle of a tediously slow arithmetic lesson, "Em, where did I come from?" was not of the same kind that an ill-prepared mother might feel. But it *was* awkward, none the less.

Her first impulse was to hedge, telling him not to ask general questions during class. But one look at his anxious little face stopped her. She was also aware



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of Helen's gaze upon her, a half-smile on her lips, but the rest of her face set, obdurate—and yes, accusing.

"Why," she said, "well . . . "

Jay was there and she looked at him for help, even knowing that he could not give it. The helpless gesture he made with his hands was unnecessary.

"Helen says," said Paul, "that a big machine made us. She says that sometimes she can hear it throbbing. She says that when it's throbbing it's making babies."

*Oh, no,* thought Em, *not this!* This wasn't right at all. They couldn't be allowed to think like that. Machines were not the masters. Men made machines. A machine could never make men. But how else could they be expected to think? Wasn't it natural when they knew no other humans, when two machines controlled their lives?

"Do you believe that, Helen?" she asked. But Helen only dropped her eyes.

"And you, Paul, do *you* believe that?"

"I don't know what to believe."

"Have you ever heard machines, Paul?"

Helen broke in. "I don't *hear* them, I *feel* them. I feel them throb, throb, throbbing." She stopped abruptly, dropping her gaze again.

"But you both know that they're just the machines that give us our air and light and everything. They're buried down and down. They just go on working away like all good machines."

"Then, if machines didn't make us," said Paul, "where *did* we come from? We must have come from somewhere. Somewhere where there's trees and cats and —and other boys and girls." His shrill little voice mounted. "Why do you keep us locked away from them?"

"*What?*" said Em, startled. How could she begin to tell them the truth, if that was what they thought?

"Why can't we ever join them and play in the trees with them? Why do you keep the big door locked all the time?" His eyes filled with tears, but he did not cry aloud, It was that fact, that he did not cry, that decided Em more than anything else.

"I'll tell you," she said. She took one look at Jay. He nodded once, slowly. Even Jay saw there was no avoiding it this time.

THE children's eyes widened. They looked at each other and back to Em.

"Before I begin," said Em, "you must promise to be brave. You will hear things you did not expect. You were each made by a mother and a father. Jay and I are only here to see that you grow


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up well and strong and clever. Your father and mother, Paul, and yours, Helen, are dead. Once there were twenty people here and they are all dead now."

"We know what that means," said Helen. "Not alive—like the mat and the chair. But where are they? Why aren't they here, even if they *are* dead?"

Em realized with something like relief that they had no real conception of death. Perhaps it wouldn't be so difficult, after all. That could be explained later, when it had been revealed to them why it was so important to be alive. Or would they think it important after she told them what she had to tell them?

"Because the dead have no place with the living. That is, except in their thoughts. Jay and I often think of your parents and the others with them. Don't we, Jay?"

"Eh? Oh, yes, yes."

"Because they made us, too," went on Em. "Well, not *your* actual mothers and fathers, but other clever people like them. We're grateful and happy that they made us. That's why we're happy to look after you. And that's why you must try to be as clever as they were."

The children looked puzzled.

"You mean," piped Paul, "so that we can make people like you?"

"I didn't mean that," said Em. "You will have to make others like yourselves."

"But we couldn't do that," said Helen, aghast. "We're not clever enough."

"I don't think," said Em, "that you'll need to be clever to do that when the time comes. There are other reasons for you to be clever." She rose, crossing to the big door. "Come with me," she said.

THEY stood looking after her for a moment, not believing their eyes. Then they rushed after her shouting excitedly.

"Em's going to take us outside."

"Can we climb the trees, Em?"

"Are there shops there?"

She turned, one metal hand on the bolt, looking down at them as they skipped about her legs.

"There aren't any trees out there. Nor shops."

They looked up at her in shocked surprise, suddenly motionless.

"Then—it *is* all lies in the books?" said Paul slowly.

"No, it's not lies. It's just that *we* haven't got them. They're in the past."

"You mean like the fairy stories? Once upon a time? All once upon a time?"

And Helen said, "There's just nothing?"


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Em faced Jay as she said slowly, "I told you that you would hear things you did not expect. Are you really sure you want to go on?"

She looked from one to the other. She had expected them to be frightened. But she'd underestimated the effect on them of living all their lives in one confined space, their wonder at being able to step out of it at last.

"Yes. Please, Em," said Helen.

"Yes, Em," said Paul. "Please."

As she slid the bolt back she had the same feeling as when the last humans had died. The feeling of inadequacy. The disquieting knowledge that when one was dealing with inanimate objects two and two made four and nothing else, but when one was dealing with humans, even little humans—*especially* little humans—the answer might be something entirely different.

She slid the door open. The dimly lit passages confronted them.

"Oh!" they cried, sounding disappointed.

"Come along," she said quickly. She took their hands. Then she saw that Jay had not come to the door with them. He hung back, awkwardly. "Aren't you coming, Jay?"

"Oh, sure, sure," he said and lumbered after them.

"No pranks, now," said Em to the children. "Keep hold of my hands."

As they walked down the corridor Helen said, "I feel it."

"I feel it, too, now," said Paul.

The slight vibration of the engines increased. They passed down a short flight of steps. "Now I *hear* it," said Helen.

"Now you see it," said Em as they turned a bend.

AND there were the engines, the great engines, purring and purring, the lights winking over the panels.

"Oooh!" breathed the boy. "Look at that great wheel spinning."

"That's the one that supplies us with air," said Em.

Paul took a deep breath. "It smells funny here."

"That's ozone," Em said.

"What's ozone?"

"I'm not sure," said Em. "It's some special kind of air. It's all explained in the books. All about how to stop the machines and how to start them and how to make them go faster. You should see them when they're really going. They're only ticking over now. But, my, when they really cut loose it's wonderful."

"Why, what do they do then, Em?"

It was going right, she thought. They would understand, because


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now they would want to.

"Come along," she said, "and I'll show you." She led them along the walk to the control room. But there she felt doubt return. Her hand hesitated on the switch. And then, because she knew there was no turning back now, she pressed it.

The children gasped and fell back a step, stumbling, fearing they would fall. Em laid her hands upon their shoulders. "There, it's all right," she said.

The screen seemed to curve above and beneath and all around them. It was as if they were suspended in the breathing heart of the Universe. But because the children had no notion of the word *Universe,* this being the first time they had even seen the stars, to them it was like floating in a great dream, a great and wonderful dream.

It was Paul who, after many moments, broke the silence. And then he only whispered the one word, "*Stars!*" and he was not speaking to Helen or Em or Jay —or even to himself. He was addressing *them,* the stars.

"They're diamonds," said Helen. "Like in the story. Diamonds and rubies and emeralds. Reach out and get one for me, Em, so I can hold it in my hand."

"I can't," said Em. "How far away do you think they are?" realizing even as she asked it that the question could have no meaning for them.

But Helen was too excited to pursue that one. "Look," she said. "Look at that great big cloud."

In the infinitely clear depths of infinite space it *was* like a cloud. It couldn't have been anything *but* a cloud to a child who had never seen the skies of Earth. But the teacher in Em could not help saying, "That's a nebula."

But Helen did not hear her. She danced up and down, clapping her hands. "That's *my* cloud. I'm going to find a wonderful name for it. What about you, Paul? Do you want that big blue star and red star together?"

But Paul had turned away puzzledly from the screen.

"What is it, Paul?" Em asked.

"I'm just wondering," he said.

"Wondering what?"

"Why you had to keep this away from us all this time."

"Because . . . " Em faltered. "Because I didn't know whether you were ready for it."

"Ready?" he said, and though his voice asked a question, his tone held a strange confidence. "But why not?" Helen, too, turned away from the screen to look puzzled.

HEAVENS, thought Em, had all those precautions been unnecessary, then? She had only


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been carrying out instructions as best she could. And her own reasoning had told her they were wise ones. But had they been? Perhaps she and the parents alike had overestimated the dangers. Perhaps because *they* had known what it was like to have a wide world under one's feet, they had not understood that it would not be the same for children born in space. *But no,* she told herself. *They don't know all of it yet.*

And then she told them.

How this was the first starship and probably the last for a long, long time, because starships couldn't be made every day of the week to launch into space. Nor could men and women be found so easily to volunteer for the years of journeying that it entailed—the years of journeying and possibly never arriving, possibly dying before reaching their goal, but having children before they died, so that the children would carry on.

And how it had gone wrong. How they had died too soon. How the disease had struck the first generation before they were far out in interstellar space—too far out to return. How unknown radiations had produced an unknown germ that had stricken all the adults, attacking their nervous systems. How this had broken out not long before the two children had been born. And how Em helped as best she could at the births because there had been so few of the crew left by then, and those that were still alive had been stricken by the uncontrollable palsy that was the herald of death.

And then the mothers had died, and the other remnants of the crew. And they died, not quite without hope now. Not quite.

Em suddenly realized, in the middle of telling it, that talk of stars and starships could have little meaning for the children. So she digressed to explain something of what she knew of the Universe, of its vast depths and distances, of how great a venture it was to be crossing them.

She explained that this was why she and Jay had to watch over them so carefully, why she and Jay had to teach them to read and understand the books, so that they would be able to carry on the great venture. Because one day the ship would have to be piloted down to a new world. She and Jay couldn't do that unaided.

Jay told them the original purpose for which they had been brought along — to navigate the ship under the stresses of landing—and the stresses of that first takeoff from Earth. That, and to explore any worlds that might be difficult for humans to explore. But they couldn't do it


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without the help of humans to plan and direct.

JAY was silent. Em also waited silently. That was too much to ask of the children all at once. So they just waited.

Paul spoke first and his words seemed strangely irrelevant. He turned to Em. "Then *you* don't die—you and Jay?"

"Why, no," she answered. "We go on looking after you and then after the children you will have. We just go on and on, like all good machines." Now, she could admit the difference between them. It was better this way.

"You're not machines," said Helen stoutly. "You're too wise to be machines."

"Well, we're *wise* machines, then," Em said, and then, thinking they were getting off the subject, "so, you see, that's why there aren't any trees or cats or other children. They're too far away, like the stars."

"Which one of those stars is Earth?" said Paul. The word sounded odd on his lips.

"You can't see Earth from here," said Em. "It's much too far away. Besides, it isn't a star. It's a planet going around a star."

"Which star?" said Paul, and Em realized that she didn't know.

"I'll look it up in the charts," she said hastily, hoping she could read them correctly, "and then I'll point it out to you. How's that?"

"Could you see all this," said Helen, "back on Earth?"

"Oh, no, never like this. Half the time you couldn't see it at all because the Sun was too bright."

Paul excitedly said, "But then it's only just a long way away. Back on Earth there's trees and cats and all those things. And—children just like us seeing them every day. Why, right now . . ."

"But there were other things," Em said quickly. "Bad things as well. Things we're free of here, thank goodness."

"What bad things?" said Helen. "Like being dizzy because of going around and around all the time?"

"No," said Em. "Nobody ever got dizzy from that. *We're* traveling at a great speed now, but we don't get dizzy, do we? No, but believe Em, there *were* bad things—lots of them." A sudden thought struck her. "Otherwise your parents and the others wouldn't have wanted to leave Earth, would they?"

"No," admitted Paul, but he didn't seem very convinced.

IT was Jay—Jay who had been silent most of the time for fear of upsetting things—who said impulsively, "Don't you see? They just got tired of going



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around and around the same little star all the time. They didn't get giddy, they just got tired of it, sick and tired. And they didn't want that for their children. They wanted to give them a better life, a real start in life—"

He stopped as abruptly as he had begun. He turned away as if fearing he had said the wrong thing.

Em touched his square shoulder. One look at the children's faces told her that he had said the *right* thing, the supremely right thing. Jay turned back and Em nodded, her hand still resting gratefully on his shoulder.

Paul said, "And when we get to a new world, will there be trees and cats?"

"There might be trees," said Em. "There might be cats." She had heard the humans discussing these things. "There might be—anything."

She felt a sudden pang of guilt. Was it right not to tell them the rest? She started to, then checked herself. No, the crisis had been met and surmounted. That was the important thing now.

"*Anything?*" said Paul.

"Giants, even?" said Helen, her eyes round with wonder. "Wizards? Fairy castles?"

"Yes," said Em, "there might be all of those and more. Nothing guaranteed, mind you, but anything is possible. Anything at all."

And so she did not add that it wouldn't be for another hundred and twenty years. That could be told later.

—ARTHUR SELLINGS

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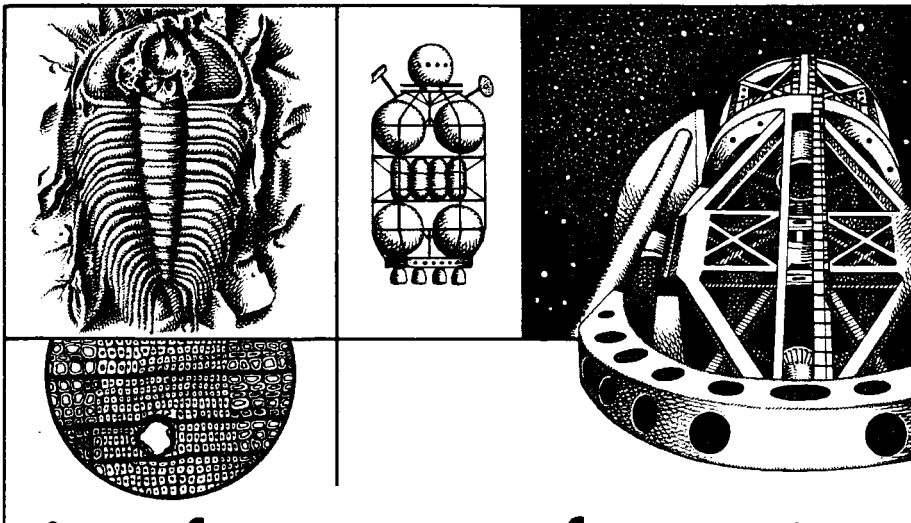

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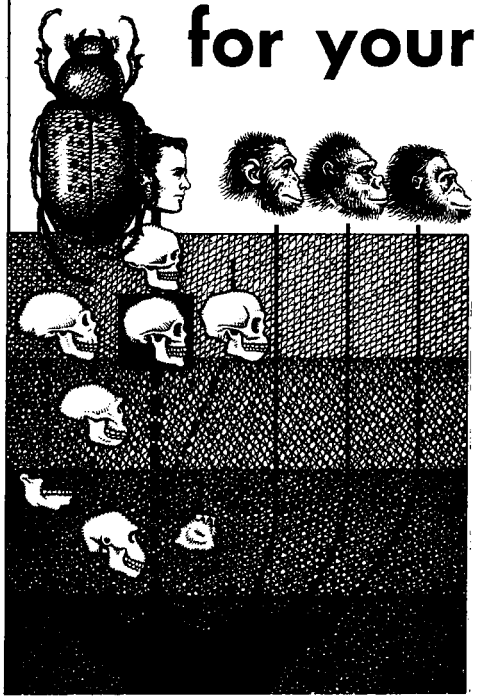

By WILLY LEY

## THE SOUTHERN CROSS

IF science fiction, as one definition has it, is literature based on known scientific facts and the extrapolation of accepted scientific theories, one of the great works of world literature has to be classified as science fiction—or at least a small portion of one of its three parts. I am speaking of Dante's *Divina Commedia.* In Part II, *Purgatorio,* there are a few lines that have intrigued



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scientists for a long time. As important a personage as Alexander von Humboldt devoted a section of one of his books (*Examen critique de l'histoire de géographie,* vol. IV, Paris, 1836) to a searching appraisal of these lines.

Since quite a number of readers know Italian (as well as the fact there is an Italian edition of this magazine), I'll give the original wording first and follow it with the English translation:

Jo nu volsi a man destra, e posi mente
All' altro polo, e vidi quattro stelle
Non viste mal fuor ch'alla prima gente,
Goder pareva il ciel di lor fiammelle,
O settentrional vedovo sito
Poi che privato se' di mirar quelle!

At right, in the direction of the southern pole
I saw the lights of a quadruple star
Which the first couple only was to see,
The heavens gloried in its radiation,
O you poor widowed barren North,
You never see the marvel of this constellation!

SOMEBODY who does not know the background might dismiss these lines with the remark "Well, why not?" or words to that effect. The point here is that the dates involved do not seem to match in a spectacular manner.

Dante began the *Divina Commedia* in 1307; the above lines were written about ten years later. They unmistakably refer to the constellation now called the Southern Cross. But the Southern Cross was "discovered" by the Venetian explorer Alvise da Cadamosto, sailing for Prince Henry of Portugal, in 1455!

To make the case even more mysterious, Dante stated that "the first couple," meaning Adam and Eve, could see it. They were supposed to have lived in the Euphrates Valley, from which the Southern Cross is not visible, not now and not in Dante's time. But theological reasoning put the creation of the world and the time of Adam and Eve at about 6,000 years ago—*and, at that time, the Southern Cross could be seen from the Euphrates Valley in present-day Iraq and even from points in Central Europe!*

How could Dante know these things?

For a man of his time, he traveled a great deal, but mostly to the north of his native Florence. Even if he had gone as far south as is possible in Italy, he could not have seen it, for the toe of the Italian boot just touches the 38th parallel of northern latitude and, in order to see the Southern Cross at all, one has to be south of the 30th parallel of northern latitude. To see it clearly in the sky some distance above the horizon, one has to be south of the 15th parallel of northern latitude.

This means that Dante should have had to travel at least to


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Upper Egypt or to the southern portions of the Red Sea and the Arab peninsula. For good visibility, he should have had to go to Ethiopia or to Ceylon. (For corresponding areas in the Western Hemisphere, one needs a trip to Mexico or Cuba to see the constellation at all, and to Nicaragua or the Canal Zone for a good view.)

THE fact that Dante obviously had not seen the Southern Cross himself accounts for his exaggeration, because the Southern Cross is a comparatively small constellation that does not measure up at all against the Big Dipper or Orion. Nor is it a particularly good cross — the two arms do not form a right angle and the effect is marred by the presence of a fifth star.

Interestingly enough, it took some time until it was even referred to as a cross. Its "discoverer" Cadamosto did not call it a cross and Amerigo Vespucci referred to it as "rhombus." Even the intensely religious Dante himself merely spoke, as we have seen, of the *quattro stelle,* the "four stars."

What makes the whole case so intriguing is that Dante's lines are literally the earliest mention of the constellation.

At the time of Homer (about 800 B.C.), the Southern Cross was still visible from the Mediterranean, but low on the horizon. It cannot have been conspicuous because the *Odyssey*—which, in one section now referred to as "Kalypso's sailing instructions," goes into constellations for navigational purposes with great detail—does not mention it at all. Nor did Ptolemy. At the time he lived in Alexandria, the star *alpha* of the Southern Cross still climbed to a little more than six degrees of arc above the horizon of his city. But he seems to have added it to the constellation of Centaurus.

The only place where it was probably mentioned as a separate constellation is in the Bible, in the Book of Job (9:9) where Job says that the Lord "maketh the Bear, Orion, and the Pleiades and the Chambers of the South." At the time this book originated (4th century B.C.), the Cross was still visible from southern Palestine, but the term "chambers of the south" is obviously no helpful description to somebody who did not know it in the first place.

BUT while Dante could not have derived his information from older books, which were silent on this point, there were other sources for such knowledge. It is known that soon after the year 1200, an Arab by the name of Caissar ben Abucassan had a



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globe of the sky made in Egypt, on which the Southern Cross was entered. A later globe—made in 1279—also of Arab origin, is still in existence. It is known furthermore that Emperor Frederick II of Hohenstaufen acquired an Arab tent in 1229 that was a revolving map of the sky (actually the first known planetarium), although no details exist.

In addition to these globes and star maps, there were enough people in Dante's time, mostly Arabs but also Europeans, who had traveled to places where the Southern Cross is clearly visible.

One thing indicating that Dante relied on an eyewitness story is that, immediately following the lines quoted, he says he glanced back to the north "where the Wain had disappeared."

As everybody knows from personal experience, the "Wain" (Big Dipper) is the most conspicuous constellation of the northern sky. Europeans always felt uneasy when they came to areas where their main "sky mark" was no longer visible. The soldiers of Alexander the Great are the earliest men known to have complained about this. Even Marco Polo, who does not seem to have had any interest in the sky and never mentioned it, succumbed at one point by saying that Polaris cannot be seen from Sumatra.

Though Dante could (and obviously did) find out about the existence and appearance of the Southern Cross, it is hard to see where he could have learned about the visibility of that constellation in higher northern latitudes at an earlier period.

True, the precession of the equinoxes responsible for this phenomenon had been discovered long before him by Hipparchos of Nicaea, but later astronomers had paid little attention to it. In fact, only the Arabs seem to have believed in what is now called "trepidation of the equinoxes," a wrong theory that assumed the precession would accumulate and then swing back.

Dante, of course, did not have to decide which theory was right. He only had to learn somewhere that astronomers knew of a steady displacement of the stars in the sky. He might then simply have been convinced that one of the attributes of Eden had been to see all the stars in the sky.

But whether he reasoned on the foundations of a then current theory or simply guessed, it so happened that he was right!

## EARTH'S OTHER MOON(S)

DR. Clyde Tombaugh, the discoverer of Pluto, who now lives near the White Sands Proving Grounds, and Dr. Lincoln La



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Paz, director of the Institute of Meteoritics at Albuquerque, New Mexico, are engaged in a project that more than fifty years ago was half-heartedly started in Europe, but then petered out for lack of success and financial support. This time, the support comes from the U. S. Ordnance Department. As for the probable chances of success, with the much better instrumentation now available, they might have had some between the writing and the publication of this column.

The project: To find out whether Earth has more than one moon.

As mentioned in the opening sentence, the problem is not exactly new. My own teacher, in fact, was fond of saying that his teacher used to say that *his* teacher considered it highly probable that Earth might have several tiny moons. Possibly, he added, Earth might even have a very faint ring. And the man who made this statement, the astronomer M. Wilhelm Meyer, asserted in turn that he was more or less quoting casual opinions of *his* teacher, Prof. E. F. W. Klinkerfues. Since Klinkerfues died in 1884, this succession of opinions has carried us back quite far, but not to the beginning of the idea, which originated in France nearly a century ago.

The original paper by one F. Petit of Boulogne may be classified as "forgotten," but the idea was not because Jules Verne read it (or read about it) one day and utilized it in his second novel about the cannon-shot to the Moon.

This book, entitled *Autour de la Lune,* appeared in 1870, five years later than the first book, *De la Terre à la Lune.* If you have read it, you might remember that the three inhabitants of the Moon projectile—Barbicane, Nicholl and Ardan—have managed to recover from the shock of the firing. Since they, in Jules Verne's opinion, cannot tell whether they are moving or not —actually they could not possibly miss the sensation of being in free-fall—they look out of the window to see whether they are in space.

> When Barbicane was about to leave the window his attention was attracted by the approach of a brilliant object. It was an enormous disk the colossal dimensions of which could not be estimated. Its face which was turned in the direction of the Earth was very bright. One might have thought it a small moon reflecting the light of the large one. It approached with a high velocity and seemed to travel in an orbit around the Earth which would intersect that of the projectile . . . The object passed several hundred yards from the projectile and disappeared.

In response to a surprised remark made by Michel Ardan, Mr. Barbicane launched into one



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of his usual short lectures:

"It is a simple meteorite, but an enormous one, retained as a satellite by the attraction of the Earth . . . But this second moon is so small and its velocity so great that the inhabitants of Earth cannot see it. It was by noticing disturbances that a French astronomer, Monsieur Petit, could determine the existence of this second moon and calculate its orbit. According to him a complete revolution around the Earth takes three hours and twenty minutes."

"Do all astronomers admit the existence of this satellite?" asked Nicholl.

"No," replied Barbicane, "but if, like us, they had met it they could no longer doubt it . . . But this gives us a means to determine our position in space; its distance is known and we were, therefore, 4650 miles above the surface of our globe when we met it."

It is this encounter, Jules Verne explained, that made the projectile deviate from its trajectory and miss the Moon, to the great good fortune of the travelers.

Since 1870, the story, in various languages, has been read by perhaps five million people. At least one hundred professional astronomers must have been among those five million. Yet it took until 1952 before somebody noticed that Jules Verne's figures for distance and period of revolution do not jibe.

It was Dr. Robert S. Richardson of Mt. Wilson Observatory who did, but what he really wanted to check was whether the gravitational field of the second moon would be strong enough to deflect the projectile from its path. (It wouldn't.) In looking for clues to the size of the second moon, he noticed the discrepancy. (See: *Bull. Pacific Rocket Soc.* Vol. 5, No. 10; Oct., 1952.) Either the period was three hours and 20 minutes, when the distance from the surface would have to be 3,114 miles, or else the distance was 4,650 miles, when the period would have to be four hours and 30.7 minutes.

This goes for orbits that are circular or very nearly so, as implied by Jules Verne. Of course, if Petit had an elliptical orbit in mind, both figures can be true. The body might have an orbital period of three hours and 20 minutes and reach the distance of 4,650 miles at one point of its orbit. Nothing is actually said about the size of the satellite, but the idea seems to have been that it was at least a mile in diameter.

WE can be certain that a second moon of Earth of the type postulated by Petit and popularized by Jules Verne does not exist.

If it did, it would take one hour and 21 minutes to cross the sky from horizon to horizon, incidentally rising in the west and setting in the east. Not quite half of that time, it would be invisible inside the Earth's shadow. But,


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while rising, it would be above the horizon for 23 minutes before it entered the shadow and it would need another 23 minutes from leaving the shadow until it disappeared below the horizon on the other side.

Even if its surface, like that of the Moon, were quite dark (think of lava or dark slate for the proper color value), the satellite would reflect enough sunlight to look like a very bright star and a careful observer could actually see it move.

If Earth had a second satellite like that, its existence would have been known since the days of the Babylonians. This would still be true even if it were twenty times as far away as postulated. A one-mile satellite would be visible to the naked eye at a distance of 100,000 miles. It would be faint, certainly, but one would notice that this faint star does not occupy the same position among the fixed stars that it did an hour ago.

Even cutting down its size to a mere five per cent of a mile, the satellite would be likely to be known if it were near enough. A satellite of that size (again assuming that its surface is as dark as lava) would still be visible to the naked eye at a distance of 1000 miles. It would no longer be a conspicuously bright star, but it would give itself away by its fast movement.

If this 1/20th-of-a-mile satellite revolved at a distance of 10,000 miles, it would have remained undiscovered prior to the invention of the telescope. But it certainly would have been found during the last hundred years, because it would show in any good portable instrument.

All of this implies that a second satellite of Earth, to escape discovery until now, would have to be small, less than a hundred feet in diameter. At that size, it would be too small to be seen without a telescope. Even with a telescope, it would be too faint to be conspicuous.

One has to bear in mind that an observer usually looks for a specific thing and may therefore pay little attention to other objects. Besides, in telescopic observations, the field of vision is small. Something quite spectacular could be going on just "outside the telescope" and not be noticed as long as it is invisible to the unaided eye. This applies to direct observation.

The widespread use of photography in astronomical work imposes another condition for still undetected satellites. They must not only be small—they must also be near, so that they move fast. If they do that, they may escape detection by appearing to be something else.



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ANY telescope of reasonably large size, with or without photographic attachment, is moved by a clockwork mechanism "to follow the stars"—more precisely, to compensate for the rotation of the Earth. This means, of course, that the mechanism compensates for the apparent movements of objects that rise in the east and set in the west.

But a *near* satellite would seem to go the other way across the sky.

It would not only be quite fast by itself; it would appear even faster because the telescope moves in the opposite direction. The inevitable result is that such a satellite, accidentally photographed, would leave a trail from edge to edge of the plate. But so does every bright meteor.

While a meteor trail across a plate is of some casual interest, not much lasting attention would be paid to it. In the first place, the picture has been taken for another purpose. In the second place, a photograph of a meteor track, unless taken with a special camera and preferably with two cameras simultaneously, teaches very little.

In short, the hypothetical satellite track would be mistaken for a meteor track. Even if somebody was suspicious, there would hardly be a way of proving the suspicion.

Just how Drs. La Paz and Tombaugh will try to catch the minor satellite(s) has not been disclosed. But the principle is fairly obvious. Although such a small satellite could have an orbit lying in any position compared with the ecliptic—the orbit of the Earth around the Sun—the probability is that the satellite orbit would be near the ecliptic. This narrows the search down to a specific band or zone.

Furthermore, as we have seen, such satellites must be fairly near, probably less than 10,000 miles at the most. This determines, in approximation, the speed of their movement.

Now if a telescopic camera, aiming in the direction of the ecliptic, were clockwork guided to run opposite to the usual direction, the plates would be full of star tracks. They could easily be identified as such because the star tracks would all be of the same length.

But if one of these tracks appeared much shorter than the others, it would indicate an object rising in the west. The speed of its apparent movement could easily be calculated from the length of its track, compared with the length of a star track. And once such an object has been "caught," it will not be lost again.

Since the unknown moons of Earth are likely to be quite small,



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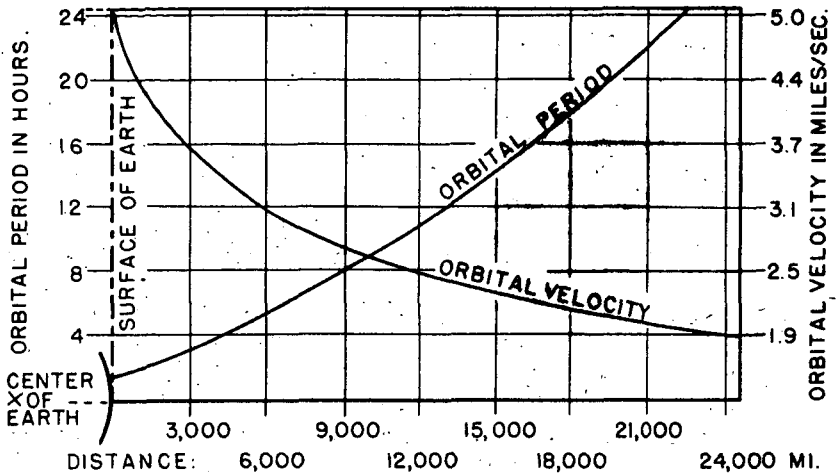


Diagram of the relationship between orbital velocity, (refer to right-hand column), orbital period (refer to left-hand column) and distance from the surface of Earth (bottom row). It is unlikely that moonlets of any noticeable size would have remained undiscovered if they circled Earth at distances greater than 25,000 miles. (Adapted from a diagram by Arthur C. Clarke)

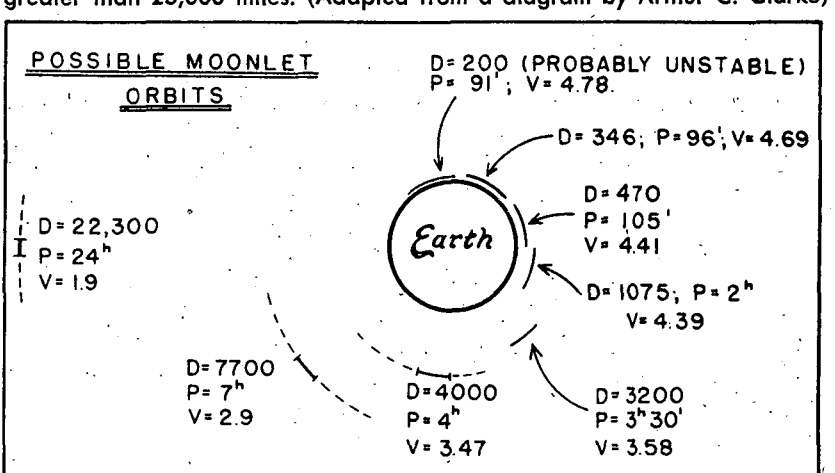


Diagram of eight of the infinite number of possible moonlet orbits near Earth. In each case, *D* gives the distance from the surface in miles, *P* the period in minutes (') or hours (h) and *V* the orbital velocity in miles per second. The length of the piece of orbit shown in the diagram represents the movement in ten minutes.

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they may not offer any practical advantages. But it will be useful to know that they exist and where they are.

## ANY QUESTIONS?

*In your book,* The Conquest of the Moon, *I find a table which says that the Moon can be, at times, more than* 30,000 *miles farther away from the Earth than at other times. If this is correct, shouldn't the Moon look larger sometimes?*

*Lawrence M. Marten*
*122 N. Baker St.*
*Topeka, Kansas*

**Yes, it should and it does. Here's a comparison of the apparent sizes at the two extreme distances.**

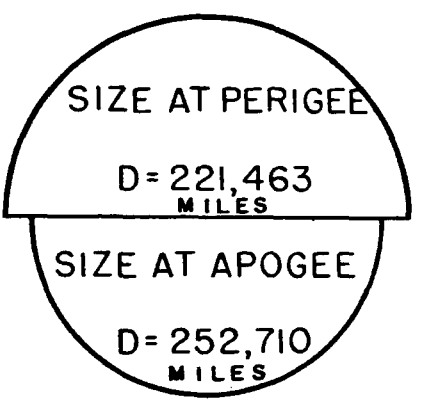
**But since the apparent diameter of the Moon is only about 1/2 of a degree of arc, this difference of not quite 15 per cent in apparent diameter is unlikely to be noticeable to the naked eye.**

**It does show on photographs, however.**

*How high would a rocket have to go to be out of the Earth's gravity?*

*George F. McManus*
*1403 W. 27th St.*
*Brooklyn, N. Y.*

**This is one of the two questions—the other is, "What are the Flying Saucers?"—I always try to bet on with the chairman of a lecture committee prior to a public lecture.**



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My bet is simply that one or both of these questions will be asked. But apparently I sound so confident when making the proposition that no chairman has ever accepted the bet.

Well, to come to the point, there is no such thing as a distance at which a gravitational field will suddenly stop.

For every star, planet or moon, the rule is the same: If the gravitational field at the surface of the body has a strength of 100, the strength will be 25 at a distance of one radius from the surface. At a distance of two radii, it will be 11. At three radii, 6.3. At four radii, 5. At five radii, 2.5. At six radii, 2 and at seven radii 1.6 or still a little more than 1-1/2 per cent of the surface value. And in the case of Earth, seven radii amount to more than 27,650 miles.

In other words, a gravitational field does not stop somewhere. It slowly peters out, just as a powerful light, if you move away from it, grows fainter and fainter without suddenly disappearing (except that, on Earth, it may be cut off by the horizon).

Therefore, a gravitational field "disappears" only if you are an "infinite" distance away. In practice, however, there comes a point where another gravitational field is equally powerful and, beyond that point, more powerful than that of Earth.

For example, at a distance of 162,000 miles from the surface of Earth, the field of Earth and that of the Sun are of equal strength. More than 162,000 miles from Earth, the gravitational field of the Sun is stronger than that of our planet.

One might say, then, that Earth's field forms a "bubble" some 325,000 miles in diameter inside the immense gravitational field of the Sun.

—WILLY LEY

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## FORECAST

Next month brings SPY, a dazzlingly devious novella by J. T. McIntosh. Corvey lived, laughed, loved, killed and died a thousand times . . . but which one of all these lifetimes was actually his own? Don't bother guessing; live through Corvey's experiences with him!

Philip K. Dick comes up with a novelet called A WORLD OF TALENT . . . and no title ever fitted a story more exactly . . . in the startling novelty of its ideas, in freshness of treatment and the eye-popping ending!



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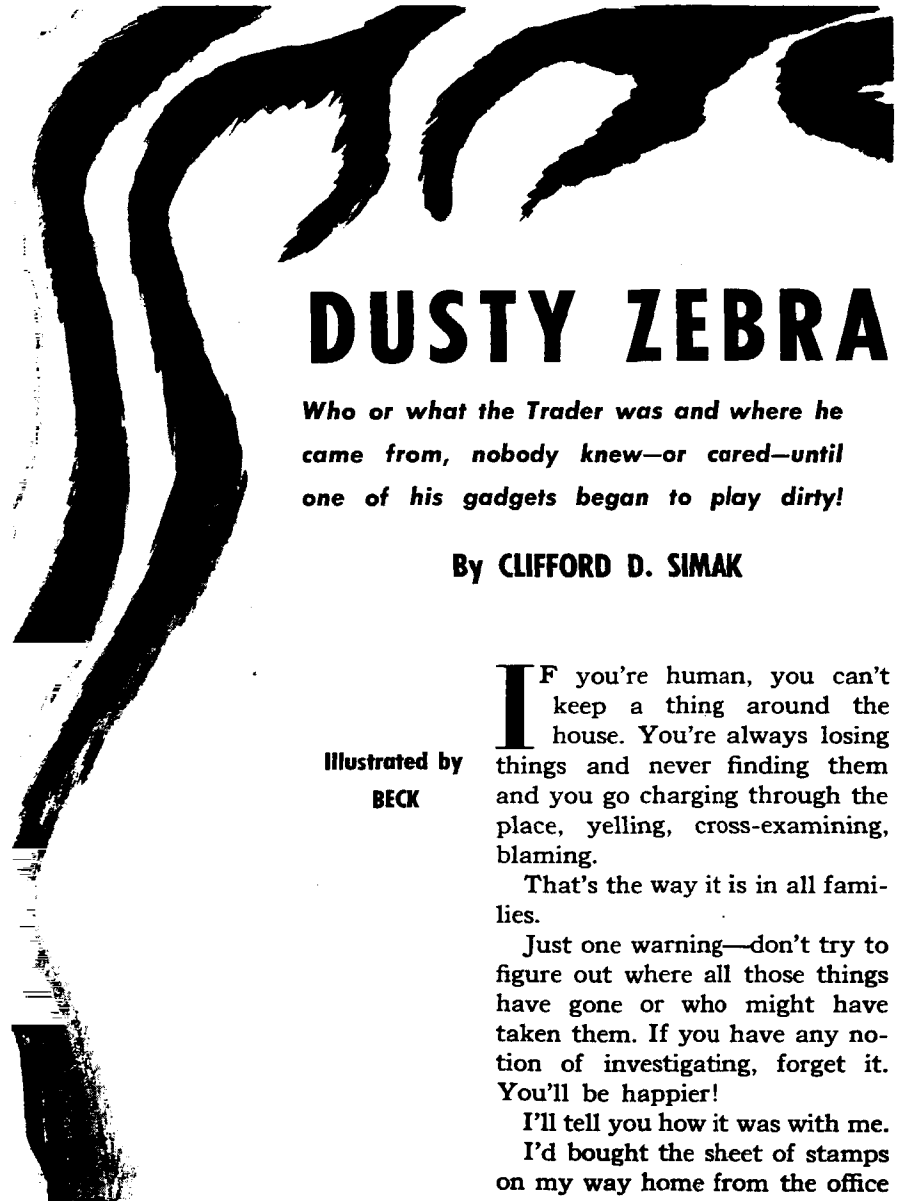

# DUSTY ZEBRA

***Who or what the Trader was and where he came from, nobody knew—or cared—until one of his gadgets began to play dirty!***

**By CLIFFORD D. SIMAK**

**Illustrated by BECK**

IF you're human, you can't keep a thing around the house. You're always losing things and never finding them and you go charging through the place, yelling, cross-examining, blaming.

That's the way it is in all families.

Just one warning—don't try to figure out where all those things have gone or who might have taken them. If you have any notion of investigating, forget it. You'll be happier!

I'll tell you how it was with me.

I'd bought the sheet of stamps on my way home from the office



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so I could mail out the checks for the monthly bills. But I'd just sat down to write the checks when Marge and Lewis Shaw dropped over. I don't care much for Lewis and he barely tolerates me. But Marge and Helen are good friends, and they got to talking, and the Shaws stayed all evening.

Lewis told me about the work he was doing at his research laboratory out at the edge of town. I tried to switch him off to something else, but he kept right on. I suppose he's so interested in his work that he figures everyone else must be. But I don't know a thing about electronics and I can't tell a microgauge from a microscope.

It was a fairly dismal evening and the worst of it was that I couldn't say so. Helen would have jumped all over me for being anti-social.

So, the next evening after dinner, I went into the den to write the checks and, of course, the stamps were gone.

I HAD left the sheet on top of the desk and now the desk was bare except for one of the Bildo-Blocks that young Bill had outgrown several years before, but which still turn up every now and then in the most unlikely places.

I looked around the room. Just in case they might have blown off the desk, I got down on my hands and knees and searched under everything. There was no sign of the stamps.

I went into the living room, where Helen was curled up in a chair, watching television.

"I haven't seen them, Joe," she said. "They must be where you left them."

It was exactly the kind of answer I should have expected.

"Bill might know," I said.

"He's scarcely been in the house all day. When he does show up, you've got to speak to him."

"What's the matter now?"

"It's this trading business. He traded off that new belt we got him for a pair of spurs."

"I can't see anything wrong in that. When I was a kid . . ."

"It's not just the belt," she said. "He's traded everything. And the worst of it is that he always seems to get the best of it."

"The kid's smart."

"If you take that attitude, Joe . . ."

"It's not *my* attitude," I said. "It's the attitude of the whole business world. When Bill grows up . . ."

"When he grows up, he'll be in prison. Why, the way he trades, you'd swear he was training to be a con man!"

"All right, I'll talk to him."



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I went back into the den because the atmosphere wasn't exactly as friendly as it might have been and, anyhow, I had to send out those checks, stamps or no stamps.

I got the pile of bills and the checkbook and the fountain pen out of the drawer. I reached out and picked up the Bildo-Block to put it to one side, so I'd have a good, clear space to work on. But the moment I picked it up, I knew that this thing was no Bildo-Block.

It was the right size and weight and was black and felt like plastic, except that it was slicker than any plastic I had ever felt. It felt as if it had oil on it, only it didn't.

I set it down in front of me and pulled the desk lamp closer. But there wasn't much to see. It still looked like one of the Bildo-Blocks.

TURNING it around, I tried to make out what it was. On the second turn, I saw the faint oblong depression along one side of it—a very shallow depression, almost like a scratch.

I looked at it a little closer and could see that the depression was machined and that within it was a faint red line. I could have sworn the red line flickered just a little. I held it there, studying it, and could detect no further flicker. Either the red had faded or I had been seeing things to start with, for after a few seconds I couldn't be sure there was any line at all.

I figured it must have been something Bill had picked up or traded for. The kid is more than half pack-rat, but there's nothing wrong with that, nor with the trading, either, for all that Helen says. It's just the first signs of good business sense.

I put the block over to one side of the desk and went on with the checks. The next day, during lunch hour, I bought some more stamps so I could mail them. And off and on, all day, I wondered what could have happened to that sheet of stamps.

I didn't think at all about the block that had the oily feel. Possibly I would have forgotten it entirely, except that when I got home, the fountain pen was missing.

I went into the den to get the pen and there the pen was, lying on top of the desk where I'd left it the night before. Not that I remembered leaving it there. But when I saw it there, I remembered having forgotten to put it back into the drawer.

I picked it up. It wasn't any pen. It felt like a cylinder of cork, but much too heavy to be any kind of cork. Except that it was heavier and smaller, it felt some-



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thing—somehow—like a fly rod.

Thinking of how a fly rod felt, I gave my hand a twitch, the way you do to cast a line, and suddenly it seemed to be, in fact, a fly rod. It apparently had been telescoped and now it came untelescoped and lengthened out into what might have been a rod. But the funny thing about it was that it went out only about four feet and then disappeared into thin air.

Instinctively, I brought it up and back to free the tip from wherever it might be. I felt the slack take up against a sudden weight and I knew I had something on the other end of it. Just like a fish feels, only it wasn't fighting.

Then, as quickly as it happened, it unhappened. I felt the tension snap off and the weight at the other end was gone and the rod had telescoped again and I held in my hand the thing that looked like a fountain pen.

I LAID it down carefully on the desk, being very certain to make no more casting motions, and it wasn't until then that I saw my hand was shaking.

I sat down, goggling at the thing that looked like the missing fountain pen and the other thing that looked like a Bildo-Block.

And it was then, while I was looking at the two of them, that I saw, out of the corner of my eye, the little white dot in the center of the desk.

It was on the exact spot where the bogus pen had lain and more than likely, I imagined, the exact spot where I'd found the Bildo-Block the night before. It was about a quarter of an inch in diameter and it looked like ivory.

I put out my thumb and rubbed it vigorously, but the dot would not rub off. I closed my eyes so the dot would have a chance to go away, and then opened them again, real quick, to surprise it if it hadn't. It still was there.

I bent over the desk to examine it. I could see it was inlaid in the wood, and an excellent job of inlaying, too. I couldn't find even the faintest line of division between the wood and the dot.

It hadn't been there before; I was sure of that. If it had been, I would have noticed it. What's more, Helen would have noticed it, for she's hell on dirt and forever after things with a dusting cloth. And to cinch the fact that it had not been there before, no one I ever heard of sold desks with single inlaid ivory dots.

And no one sold a thing that looked like a fountain pen but could become a fly rod, the business end of which disappeared and hooked a thing you couldn't



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even see — and which, the next time, might bring in whatever it had caught instead of losing it.

Helen called to me from the living room. "Joe."

"Yeah. What is it?"

"Did you talk to Bill?"

"Bill? About what?"

"About the trading."

"No. I guess I forgot."

"Well, you'll have to. He's at it again. He traded Jimmy out of that new bicycle. Gave him a lot of junk. I made him give back the bicycle."

"I'll have a talk with him," I promised again.

BUT I'm afraid I wasn't paying as close attention to the ethics of the situation as I should have been.

You couldn't keep a thing around the house. You were always losing this or that. You knew just where you'd put it and you were sure it was there and then, when you went to look for it, it had disappeared.

It was happening everywhere —things being lost and never turning up.

But other things weren't left in their places — at least not that you heard about.

Although maybe there had been times when things had been left that a man might pick up and examine and not know what they were and puzzle over, then toss in a corner somewhere and forget.

Maybe, I thought, the junkyards of the world were loaded with outlandish blocks and crazy fishing rods.

I got up and went into the living room, where Helen had turned on the television set.

She must have seen that something had me upset, because she asked, "What's the matter now?"

"I can't find the fountain pen."

She laughed at me. "Honestly, Joe, you're the limit. You're always losing things."

That night, I lay awake after Helen went to sleep and all I could think about was the dot upon the desk. A dot, perhaps, that said: *Put it right here, pardner, and we will make a swap.*

And, thinking of it, I wondered what would happen if someone moved the desk.

I lay there for a long time, trying not to worry, trying to tell myself it didn't matter, that I was insane to think what I was thinking.

But I couldn't get it out of my mind.

So I finally got up and sneaked out of the bedroom and, feeling like a thief in my own house, headed for the den.

I closed the door, turned on the desk lamp and took a quick look to see if the dot was still there.



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It was.

I opened the desk drawer and hunted for a pencil and couldn't find one, but I finally found one of Bill's crayons. I got down on my knees and carefully marked the floor around the desk legs, so that, if the desk were moved, I could put it back again.

Then, pretending I had no particular purpose for doing it, I laid the crayon precisely on the dot.

IN the morning, I sneaked a look into the den and the crayon was still there. I went to work a little easier in my mind, for by then I'd managed to convince myself that it was all imagination.

But that evening, after dinner, I went back into the den and the crayon was gone.

In its place was a triangular contraption with what appeared to be lenses set in each angle, and with a framework of some sort of metal, holding in place what apparently was a suction cup in the center of the triangle.

While I was looking at it, Helen came to the door. "Marge and I are going to see a movie," she said. "Why don't you go over and have a beer with Lewis?"

"With that stuffed shirt?"

"What's the matter with Lewis?"

"Nothing, I guess." I didn't feel up to a family row right then.

"What's that you've got?" she asked.

"I don't know. Just something I found."

"Well, don't *you* start bringing home all sorts of junk, the way Bill does. One of you is enough to clutter up the house."

I sat there, looking at the triangle, and the only thing I could figure out was that it might be a pair of glasses. The suction cup in the center might hold it on the wearer's face and, while that might seem a funny way to wear a pair of glasses, it made sense when you thought about it. But if that were true, it meant that the wearer had three eyes, set in a triangle in his face.

I sat around for quite a while after Helen left, doing a lot of thinking. And what I was thinking was that even if I didn't care too much about Lewis, he was the only man I knew who might be able to help me out.

So I put the bogus fountain pen and the three-eyed glasses in the drawer and put the counterfeit Bildo-Block in my pocket and went across the street.

Lewis had a bunch of blueprints spread out on the kitchen table, and he started to explain them to me. I did the best I could to act as if I understood them. Actually, I didn't know head nor tail of it.

Finally, I was able to get a



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word in edgewise and I pulled the block out of my pocket and put it on the table.

"What is that?" I asked.

I expected him to say right off it was just a child's block. But he didn't. There must have been something about it to tip him off that it wasn't just a simple block. That comes, of course, of having a technical education.

LEWIS picked the block up and turned it around in his fingers. "What's it made of?" he asked me, sounding excited.

I shook my head. "I don't know what it is or what it's made of or anything about it. I just found it."

"This is something I've never seen before." Then he spotted the depression in one side of it and I could see I had him hooked. "Let me take it down to the shop. We'll see what we can learn."

I knew what he was after, of course. If the block was something new, he wanted a chance to go over it—but that didn't bother me any. I had a hunch he wouldn't find out too much about it.

We had a couple more beers and I went home. I hunted up an old pair of spectacles and put them on the desk right over the dot.

I was listening to the news when Helen came in. She said she was glad I'd spent the evening with Lewis, that I should try to get to know him better and that, once I got to know him better, I might like him. She said, since she and Marge were such good friends, it was a shame Lewis and I didn't hit it off.

"Maybe we will," I said and let it go at that.

The next afternoon, Lewis called me at the office.

"Where'd you get that thing?" he asked.

"Found it," I said.

"Have any idea what it is?"

"Nope," I told him cheerfully. "That's why I gave it to you."

"It's powered in some way and it's meant to measure something. That depression in the side must be a gauge. Color seems to be used as an indicator. At any rate, the color line in the depression keeps changing all the time. Not much, but enough so you can say there's some change."

"Next thing is to find out what it's measuring."

"Joe, do you know where you can get another of them?"

"No, I don't."

"It's this way," he said. "We'd like to get into this one, to see what makes it tick, but we can't find any way to open it. We could break into it, probably, but we're afraid to do that. We might damage it. Or it might explode. If we had another . . ."



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"Sorry, Lewis. I don't know where to get another."

He had to let it go at that.

I WENT home that evening grinning to myself, thinking about Lewis. The guy was fit to be tied. He wouldn't sleep until he found out what the thing was, now that he'd started on it. It probably would keep him out of my hair for a week or so.

I went into the den. The glasses still were on the desk. I stood there for a moment, looking at them, wondering what was wrong. Then I saw that the lenses had a pinkish shade.

I picked them up, noticing that they had been replaced by the kind in the triangular pair I had found there the night before.

Just then, Helen came into the room and I could tell, even before she spoke, that she had been waiting for me.

"Joe Adams," she demanded, "what have you been up to?"

"Not a thing," I told her.

"Marge says you got Lewis all upset."

"It doesn't take a lot to upset him."

"There's something going on," she insisted, "and I want to know what it is."

I knew I was licked. "I've been trading."

"Trading! After all I've said about Bill!"

"But this is different."

"Trading is trading," she said flatly.

Bill came in the front door, but he must have heard his mother say "trading," for he ducked out again. I yelled for him to come back.

"I want both of you to sit down and listen to me," I said. "You can ask questions and offer suggestions and give me hell after I'm through."

So we sat down, all three of us, and had a family powwow.

It took quite a bit to make Helen believe what I had to tell, but I pointed out the dot in the desk and showed them the triangular glasses and the pair of glasses that had been refitted with the pink lenses and sent back to me. By that time, she was ready to admit there was something going on. Even so, she was fairly well burned up at me for marking up the floor around the desk legs.

I didn't show either her or Bill the pen that was a fishing rod, for I was scared of that. Flourish it around a bit and there was no telling what would happen.

Bill was interested and excited, of course. This was trading, which was right down his alley.

I cautioned both of them not to say a word about it. Bill wouldn't, for he was hell on secrets and special codes. But



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bright and early in the morning, Helen would probably swear Marge to secrecy, then tell her all about it and there wasn't a thing that I could do or say to stop her.

Bill wanted to put the pink-lensed spectacles on right away, to see how they were different from any other kind. I wouldn't let him. I wanted to put those specs on myself, but I was afraid to, if you want to know the truth.

WHEN Helen went out to the kitchen to get dinner, Bill and I held a strategy session. For a ten-year-old, Bill had a lot of good ideas. We agreed that we ought to get some system into the trading, because, as Bill pointed out, the idea of swapping sight unseen was a risky sort of business. A fellow ought to have some say in what he was getting in return.

But to arrive at an understanding with whoever we were trading with meant that we'd have to set up some sort of communication system. And how do you communicate with someone you don't know the first thing about, except that perhaps it has three eyes?

Then Bill hit upon what seemed a right idea. What we needed, he said, was a catalogue. If you were going to trade with someone, the logical first step would be to let them know what you had to trade.

To be worth anything in such a circumstance, it would have to be an illustrated catalogue. And even then it might be worthless, for how could we be sure that the Trader on the other side of the desk would know what a picture was? Maybe he'd never seen a picture before. Maybe he saw differently—not so much physically, although that was possible, too, but from a different viewpoint and with totally alien concepts.

But it was the only thing we had to go on, so we settled down to work up a catalogue. Bill thought we should draw one, but neither of us was any good at drawing. I suggested illustrations from magazines. But that wasn't too hot an idea, either, for pictures of items in the magazine ads are usually all prettied up, designed to catch the eye.

Then Bill had a top-notch idea. "You know that kid dictionary Aunt Ethel gave me? Why don't we send that to them? It's got a lot of pictures and not much reading in it, and that's important. The reading might confuse them."

So we went into his room and started looking through all the junk he had, searching for the dictionary. But we ran across one of the old ABC books he'd had


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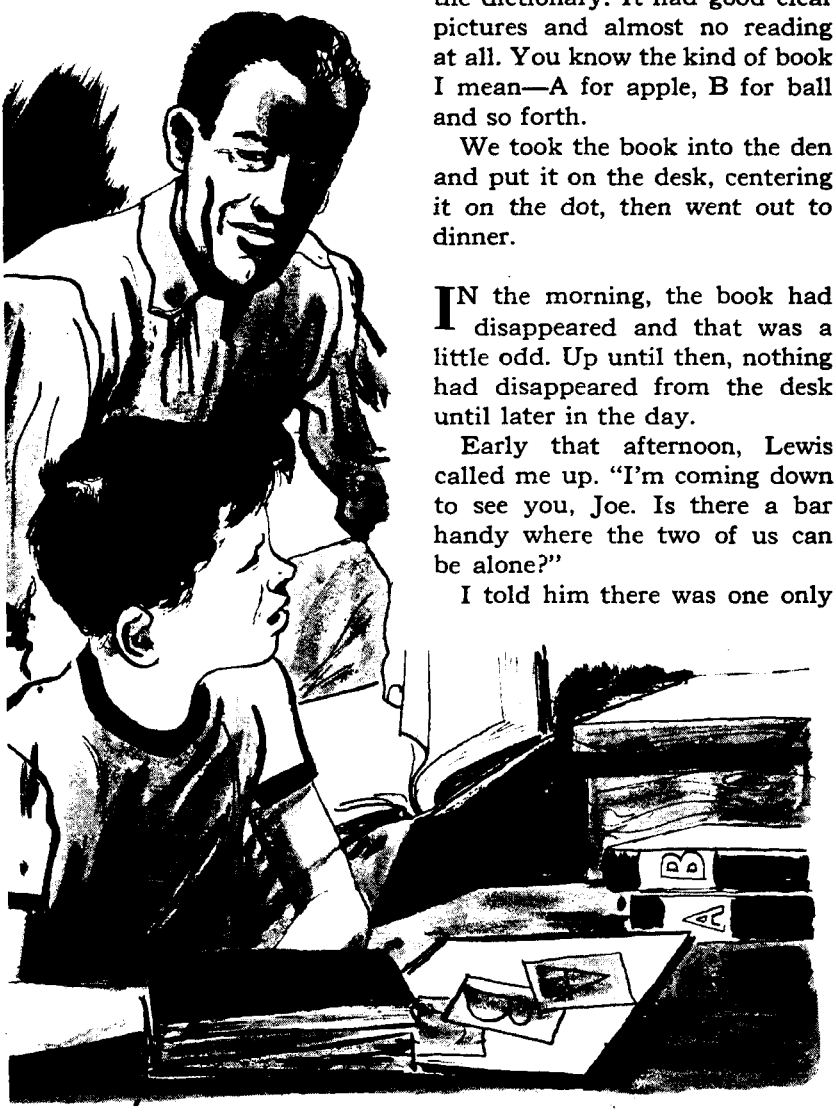
when he was just a toddler and decided it was even better than the dictionary. It had good clear pictures and almost no reading at all. You know the kind of book I mean—A for apple, B for ball and so forth.

We took the book into the den and put it on the desk, centering it on the dot, then went out to dinner.



IN the morning, the book had disappeared and that was a little odd. Up until then, nothing had disappeared from the desk until later in the day.

Early that afternoon, Lewis called me up. "I'm coming down to see you, Joe. Is there a bar handy where the two of us can be alone?"

I told him there was one only



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a block from me and said I'd meet him there.

I got a few things cleared away, then left the office, figuring I'd go over to the bar and have a quick one before Lewis showed up.

I don't know how he did it, but he was there ahead of me, back in a corner booth. He must have broken every traffic regulation on the books.

He had a couple of drinks waiting for us and was all huddled over, like a conspirator. He was a bit out of breath, as he had every right to be.

"Marge told me," he said.

"I suspected she would."

"There could be a mint in it, Joe!"

"That's what I thought, too. That's why I'm willing to give you ten per cent . . ."

"Now look here," squawked Lewis. "You can't pull a deal like that. I wouldn't touch it for less than fifty."

"I'm letting you in on it," I said, "because you're a neighbor. I don't know beans about this technical business. I'm getting stuff I don't understand and I need some help to find out what it is, but I can always go to someone else . . ."

It took us three drinks to get the details settled — thirty-five per cent for him, sixty-five for me.

"Now that that's settled," I said, "suppose you tell me what you found."

"Found?"

"That block I gave you. You wouldn't have torn down here and had the drinks all set up and waiting if you hadn't found something."

"Well, as a matter of fact . . ."

"Now just a minute," I warned him. "We're going to put this in the contract—any failure to provide full and complete analysis . . ."

"What contract?"

"We're going to have a contract drawn up, so either of us can sue the other within an inch of his life for breaking it."

Which is a hell of a way to start out a business venture, but it's the only way to handle a slippery little skate like Lewis.

SO he told me what he'd found. "It's an emotions gauge. That's awkward terminology, I know, but it's the best I can think of."

"What does it do?"

"It tells how happy you are or how sad or how much you hate someone."

"Oh, great," I said, disappointed. "What good is a thing like that? I don't need a gauge to tell me if I'm sore or glad or anything."

He waxed practically eloquent. "Don't you see what an instrument like that would mean to



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psychiatrists? It would tell more about patients than they'd ever be willing to tell about themselves. It could be used in mental institutions and it might be important in gauging reactions for the entertainment business, politics, law-enforcement and Lord knows what else."

"No kidding! Then let's start marketing!"

"The only thing is . . ."

"Yes?"

"We can't manufacture them," he said frustratedly. "We haven't got the materials and we don't know how they're made. You'll have to trade for them."

"I can't. Not right away, that is. First I've got to be able to make the Traders understand what I want, and then I'll have to find out what they're willing to trade them for."

"You have some other stuff?"

"A few things."

"You better turn them over to me."

"Some that could be dangerous. Anyhow, it all belongs to me. I'll give you what I want, when I want and . . ."

We were off again.

We finally wound up by adjourning to an attorney's office. We wrote up a contract that is probably one of the legal curiosities of all time.

I'm convinced the attorney thought, and still thinks, both of us are crazy, but that's the least of my worries now.

The contract said I was to turn over to Lewis, for his determination of its technical and merchandisable nature, at least 90 per cent of certain items, the source of which I alone controlled, and with the further understanding that said source was to remain at all times under my exclusive control. The other 10 per cent might, without prejudice, be withheld from his examination, with the party of the first part having sole authority to make determination of which items should constitute the withheld 10 per cent.

UPON the 90 per cent of the items supplied him, the party of the second part was to make a detailed analysis, in writing, accompanied by such explanatory material as was necessary to the complete understanding of the party of the first part, within no more than three months after receipt, at the end of which time the items reverted solely to the ownership of the party of the first part. Except that such period of examination and determination might be extended, under a mutual agreement made in writing, for any stated time.

Under no circumstances should the party of the second part conceal from the party of the first



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part any findings he might have made upon any of the items covered by the agreement, and that such concealment, should it occur, should be considered sufficient cause for action for the recovery of damages. That under certain conditions where some of the items might be found to be manufacturable, they could be manufactured under the terms of clauses A, B and C, section XII of this agreement.

Provisions for a sales organization to market any of said items shall be set up and made a part of this agreement. That any proceeds from such sales shall be divided as follows: 65 per cent to the party of the first part (me, in case you've gotten lost, which is understandable), and 35 per cent to the party of the second part (Lewis); costs to be apportioned accordingly.

There were a lot more details, of course, but that gives you an idea.

We got home from the attorney's office, without either of us knifing the other, and found Marge over at my place. Lewis went in with me to have a look at the desk.

Apparently the Trader had received the ABC book all right and had been able to understand why it was sent, for there, lying on the desk, was a picture cut out of the book. Well, not cut out, exactly — it looked more as though it had been burned out.

The picture on the desk was Z for zebra.

Lewis stared worriedly at it. "Now we're really in a fix."

"Yeah," I admitted. "I don't know what the market price is, but they can't be cheap."

"Figure it out—expedition, safari, cages, ship, rail, fodder, keeper. You think we can switch him to something else?"

"I don't see how. He's put in his order."

Bill came wandering in and wanted to know what was up. When I glumly told him, he said cheerfully, "Aw, that's the whole trick in trading, Pop. If you got a bum jackknife you want to trade, you unload it on somebody who doesn't know what a good knife is like."

Lewis didn't get it, but I did. "That's right! He doesn't know a zebra is an animal, or, if he does, how big it is!"

"Sure," Bill said confidently. "All he saw was a picture."

IT was five o'clock then, but the three of us went uptown and shopped. Bill found a cheap bracelet charm about the size of the drawing in the book. When it comes to junk like that, my kid knows just where it's sold and how much it costs. I considered making him a junior partner in



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charges of such emergencies, with about 10 per cent share or so—out of Lewis's 35 per cent, of course — but I was sure Lewis wouldn't hold still for that. I decided instead to give Bill a dollar a week allowance, said compensation to commence immediately upon our showing a profit.

Well, we had Z for zebra—provided the Trader was satisfied with a little piece of costume jewelry. It was lucky, I thought, that it hadn't been Z for zephyr.

The rest of the alphabet was easy, yet I couldn't help but kick myself over all the time we were wasting. Of all the unworthy catalogues we might have sent, that ABC book was the worst. But until the Trader had run through the whole list, I was afraid to send another for fear of confusing him.

So I sent him an apple and a ball and a small doll for girl and a toy cat and toy dog, and so on, and then I lay awake nights wondering what the Trader would make of them. I could picture him trying to learn the use of a rubber doll or cat.

I'd given Lewis the two pairs of glasses, but had held back the fountain-pen fishing rod, for I was still scared of that one. He had turned over the emotion gauge to a psychiatrist to try out in his practice as a sort of field test.

Marge and Helen, knowing that Lewis and I had entered into some kind of partnership, were practically inseparable now. Helen kept telling me how glad she was that I had finally recognized what a sterling fellow Lewis was. I suppose Lewis heard the same thing about me from Marge.

Bill went around practically busting to do some bragging. But Bill is a great little businessman and he kept his mouth shut. I had told him about the allowance, of course.

LEWIS was all for trying to ask the Trader for a few more of the emotion gauges. He had a draftsman at the plant draw up a picture of the gauge and he wanted me to send it through to indicate that we were interested in it.

But I told him not to try to rush things. While the emotion gauge might be a good deal, we should sample what the Trader had to offer before we made up our minds.

The Trader, apparently certain now that someone was cooperating with him, had dropped his once-a-day trade schedule and was open for business around the clock. After he had run through the list in the ABC book, he sent back a couple of blank pages from the book with very crude drawings on them—drawings that looked as if they had been made with crumbly charcoal. Lewis


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drew a series of pictures, showing how a pencil worked, and we sent the Trader a ream of paper and a gross of sharpened pencils, then sat back to wait.

We waited a week and were getting sort of edgy, when back came the entire ream of paper, with each sheet covered on both sides with all kinds of drawings. So we sent him a mail-order catalogue, figuring that would hold him for a while, and settled down to try to puzzle out the drawings he had made.

There wasn't a single thing that made any sense at all—not even to Lewis. He'd study some of the drawings, then pace up and down the room, pulling his hair and twitching his ears. Then he'd study the drawings some more.

To me, it all looked plain Rube Goldbergish.

Finally, we figured we might as well forget about the catalogue idea, for the time being at least, and we started feeding all sorts of stuff through the desk—scissors, dishes, shoes, jackknives, mucilage, cigars, paper clips, erasers, spoons—almost anything that was handy. It wasn't the scientific way, I know, but we didn't have the time to get very methodical about it and, until we had a chance to work out a more sensible program, we figured we might as well try the shotgun method.

And the Trader started shooting things back at us. We'd sit for hours and feed stuff through to him and then he'd shoot stuff back at us and we had the damnedest pile of junk heaped all over the place you ever laid eyes on.

WE rigged up a movie camera and took a lot of film of the spot on the desk where the exchange was going on. We spent a lot of time viewing that film, slowing it down and even stopping it, but it didn't tell us anything at all. When the stuff disappeared or appeared, it just disappeared or appeared. One frame it would be there, the next frame it would be gone.

Lewis canceled all his other work and used the lab for nothing but trying to puzzle out the gadgets that we got. Most of them we couldn't crack at all. I imagine they were useful in some way, but we never managed to learn how.

There was the perfume bottle, for example. That is what we called it, anyhow. But there was a suspicion in our minds that the perfume was simply a secondary effect, that the so-called bottle was designed for some other purpose entirely.

Lewis and his boys were studying it down at the lab, trying to make out some rhyme or reason for it, and somehow they turned



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it on. They worked for three days, the last two in gas masks, trying to turn it off again. When the smell got so bad that people began calling the police, we took the contraption out into the country and buried it. Within a few days, all the vegetation in the area was dead. All the rest of the summer, the boys from the agricultural department at the university ran around, practically frothing at the mouth, trying to find the cause.

There was the thing that might have been a clock of some sort, although it might just as easily have been something else. If it was a clock, the Trader had a time system that would drive you nuts, for it would measure the minutes or hours or whatever they were like lightning for a while, then barely move for an entire day.

And there was the one you'd point at something and press a certain spot on it—not a button or a knob or anything as crass and mechanical as that, just a certain spot—and there'd be just a big blank spot in the landscape. But when you stopped pressing, the landscape would come back again, unchanged. We filed it away in the darkest corner of the laboratory safe, with a big red tag on it marked: *Dangerous! Don't Monkey with This!*

But most of the items we just drew blanks on. And it kept coming all the time. I piled the garage full of it and started dumping it in the basement. Some of it I was scared of and hauled out to the dump.

IN the meantime, Lewis was having trouble with the emotion gauge. "It works," he said. "The psychiatrist I gave it to to try out is enthusiastic about it. But it seems almost impossible to get it on the market."

"If it works," I objected, handing him a can of beer, "it ought to sell."

"In any other field, it might, but you don't handle merchandise that way in the medical field. Before you can put something on the market, you have to have it nailed down with blueprints and theory and field tests and such. And we can't. We don't know *how* it works. We don't know *why* it works. Until we do, no reputable medical supply house will take it on, no approved medical journal will advertise it, no practitioner will use it."

"Then I guess it's out." I felt fairly blue about it, because it was the only thing we had that we knew how to use.

Lewis nodded and drank his beer and was glummer than ever.

Looking back on it, it's funny how we found the gadget that made us all the money. Actually,


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it wasn't Lewis but Helen who found it.

Helen is a good housewife. She's always going after things with the vacuum and the dustcloth and she washes the woodwork so often and so furiously that we have to paint it every year.

One night, we were sitting in the living room, watching television.

"Joe," she asked me, "did you dust the den?"

"Dust the den? What would I want to do that for?"

"Well, someone did. Maybe it was Bill."

"Bill wouldn't be caught dead with a dustcloth in his mitt."

"I can't understand it, Joe," she said. "I went in there to dust it and it was absolutely clean. Everything just shone."

Sgt. Friday was trying to get the facts out of someone and his sidekick was complaining about some relatives that had come to visit and I didn't pay much attention at the time.

But the next day, I got to thinking about it and I couldn't get it off my mind. I certainly hadn't dusted the den and it was a cinch Bill hadn't, yet someone had if Helen was ready to admit it was clean.

So, that evening, I went out into the street with a pail and shoveled up a pailful of dirt and brought it in the house.

Helen caught me as I was coming in the door. "What do you think you're doing with that?"

"Experimenting," I told her.

"Do it in the garage."

"It isn't possible," I argued. "I have to find out who's been dusting the den."

I knew that, if my hunch failed, I'd have a lot to answer for when she followed me and stood in the doorway, ready to pounce.

THERE was a bunch of junk from the Trader standing on the desk and a lot more of it in one corner. I cleared off the desk and that was when Bill came in.

"What you doing, Dad?" he asked.

"Your father's gone insane," Helen explained quietly.

They stood there, watching me, while I took a handful of dirt and sprinkled it on the desk top.

It stayed there for just an instant—and then it was gone. The top of the desk was spotless.

"Bill," I said, "take one of those gadgets out to the garage."

"Which one?"

"It doesn't matter."

So he took one and I spread another handful of dirt and, in a second, it was gone.

Bill was back by that time and I sent him out with another gadget.



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We kept on like that for quite a while and Bill was beginning to get disgusted with me. But finally I sprinkled the dirt and it stayed.

"Bill," I said, "you remember the last thing you took out?"

"Sure."

"Well, go out and bring it back again."

He got it and, as soon as he reached the door of the den, the dirt disappeared.

"Well, that's it," I said.

"That's what?" asked Helen.

I pointed to the contraption Bill had in his hand. "That. Throw away your vacuum cleaner. Burn up the dustcloth. Heave out the mop. Just have one of those in the house and . . ."

She threw herself into my arms.

"Oh, *Joe!*"

We danced a jig, the two of us.

Then I sat around for a while, kicking myself for tying up with Lewis, wondering if maybe there wasn't some way I could break the contract now that I had found something without any help from him. But I remembered all those clauses we had written in. It wouldn't have been any use, anyhow, for Helen was already across the street, telling Marge about it.

So I phoned Lewis at the lab and he came tearing over.

We ran field tests.

The living room was spotless from Bill just having walked through it, carrying the gadget, and the garage, where he had taken it momentarily, was spic and span. While we didn't check it, I imagine that an area paralleling the path he had taken from the front door to the garage was the only place outdoors that didn't have a speck of dust upon it.

WE took the gadget down in the basement and cleaned that up. We sneaked over to a neighbor's back yard, where we knew there was a lot of cement dust, held the gadget over it and in an instant there wasn't any cement dust. There were just a few pebbles left and the pebbles, I suppose, you couldn't rightly classify as dust.

We didn't need to know any more.

Back at the house, I broke open a bottle of Scotch I'd been saving, while Lewis sat down at the kitchen table and drew a sketch of the gadget.

We had a drink, then went into the den and put the drawing on the desk. The drawing disappeared and we waited. In a few minutes, another one of the gadgets appeared. We waited for a while and nothing happened.

"We've got to let him know we want a lot of them," I said.



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"There's no way we can," said Lewis. "We don't know his mathematical symbols, he doesn't know ours, and there's no sure-fire way to teach him. He doesn't know a single word of our language and we don't know a word of his."

We went back to the kitchen and had another drink.

Lewis sat down and drew a row of the gadgets across a sheet of paper, then sketched in representations of others behind them so that, when you looked at it, you could see that there were hundreds of them.

We sent that through.

Fourteen gadgets came back—the exact number Lewis had sketched in the first row.

Apparently the Trader had no idea of perspective. The lines that Lewis had drawn to represent the other gadgets behind the first row didn't mean a thing to him.

We went back to the kitchen and had a few more drinks.

"We'll need thousands of the things," said Lewis, holding his head in his hands. "I can't sit here day and night, drawing them."

"You may have to do that," I said, enjoying myself.

"There *must* be another way."

"Why not draw a bunch of them, then mimeograph the drawing?" I suggested. "We could send the mimeographed sheets through to him in bundles."

I hated to say it, because I was still enamored of the idea of sticking Lewis somewhere off in a corner, sentenced to a lifetime of drawing the same thing over and over.

"That might work," said Lewis, brightening annoyingly. "It's just simple enough . . ."

"Practical is the word," I snapped. "If it were simple, you'd have thought of it."

"I leave things like that to detail men."

"You'd better!"

It took a while and a whole bottle before we calmed down.

NEXT day, we bought a mimeograph machine and Lewis drew a stencil with twenty-five of the gadgets on it. We ran through a hundred sheets and sent them through the desk.

It worked—we were busy for several hours, getting those gadgets out of the way as they poured through to us.

I'm afraid we never stopped to think about what the Trader might want in return for the dust-collectors. We were so excited that we forgot, for the moment, that this was a commercial proposition and not just something gratis.

But the next afternoon, back came the mimeographed sheets we'd sent through and, on the re-



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verse side of each of them, the Trader had drawn twenty-five representations of the zebra bracelet charm.

And there we were, faced with the necessity of getting together, pronto, twenty-five hundred of those silly zebras.

I tore down to the store where I'd gotten the bracelet, but all they had in stock were two dozen of the things. They said they didn't think they could order any more. The number, they said, had been discontinued.

The name of the company that made them was stamped on the inside of the bracelet and, as soon as I got home, I put in a long distance call.

I finally got hold of the production manager. "You know those bracelets you put out?"

"We put out millions of 'em. Which one are you talking about?"

"The one with the zebra on it."

He thought a moment. "Yeah, we did. Quite a while ago. We don't make them any more. In this business . . ."

"I need at least twenty-five hundred of them."

"Twenty-five hundred bracelets?"

"No, just the zebras."

"Look, is this a gag?"

"It's no gag, mister," I said. "I need those zebras. I'm willing to pay for them."

"We haven't any in stock."

"Couldn't you make them?"

"Not just twenty-five hundred of them. Wouldn't be worth it to put through a special order for so few. If it was fifty thousand, say, we might consider it."

"All right, then," I said. "How much for fifty thousand?"

HE named a price and we haggled some, but I was in no position to do much bargaining. We finally agreed on a price I knew was way too high, considering the fact that the entire bracelet, with the zebra and a lot of other junk, had only retailed at 39 cents.

"And hold the order open," I told him. "We might want more of them."

"Okay," he said. "Just one thing — would you mind telling me what you want with fifty thousand zebras?"

"Yes, I would," I said and hung up.

I suppose he thought I was off my rocker, but who cared what he thought?

It took ten days to get that shipment of fifty thousand zebras and I sweated out every minute of it. Then there was the job of getting them under cover when it came and, in case you don't know, fifty thousand zebras, even when they're only bracelet charms, take up room.



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But first I took out twenty-five hundred and sent them through the desk.

For the ten days since we'd gotten the dust-collectors, we'd sent nothing through and there had been no sign from the Trader that he might be getting impatient. I wouldn't have blamed him a bit if he'd done something, like sending through his equivalent of a bomb, to express his dissatisfaction at our slow delivery. I've often wondered what he thought of the long delay—if he hadn't suspected we were reneging on the bargain.

All this time, I had been smoking too much and gnawing my fingernails and I'd figured that Lewis was just as busy seeing what could be done about marketing the dusters.

But when I mentioned it to him, he just looked blank. "You know, Joe, I've been doing a lot of worrying."

"We haven't a thing to worry about now," I said, "except getting these things sold."

"But the dust must go somewhere," he fretted.

"The dust?"

"Sure, the dust these things collect. Remember we picked up an entire pile of cement dust? What I want to know is where it all went. The gadget itself isn't big enough to hold it. It isn't big enough to hold even a week's collection of dust from the average house. That's what worries me—where does it go?"

"I don't care where. It goes, doesn't it?"

"That's the pragmatic view," he said scornfully.

It turned out that Lewis hadn't done a thing about marketing, so I got busy.

But I ran into the same trouble we'd had trying to sell the emotion gauge.

The dust collector wasn't patented and it didn't have a brand name. There was no fancy label stuck on it and it didn't bear a manufacturer's imprint. And when anybody asked me how it worked, I couldn't answer.

One wholesaler did make me a ridiculous offer. I laughed in his face and walked out.

THAT night, Lewis and I sat around the kitchen table, drinking beer, and neither of us too happy. I could see a lot of trouble ahead in getting the gadgets sold. Lewis, it seemed, was still worrying about what happened to the dust.

He had taken one of the dust collectors apart and the only thing he could find out about it was that there was some feeble force-field operating inside of it —feeble yet strong enough to play hell with the electrical circuits and fancy metering machin-



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ery he has at the lab. As soon as he found out what was happening, he slapped the cover back on as quick as he could and then everything was all right. The cover was a shield against the forcefield.

"That dust must be getting thrown into another dimension," he told me, looking like a hound dog that had lost a coon track.

"Maybe not. It could be winding up in one of those dust clouds way out in space."

He shook his head.

"You can't tell me," I said, "that the Trader is crazy enough to sell us a gadget that will throw dust back into his face."

"You miss the point entirely. The Trader is operating from another dimension. He *must* be. And if there are two dimensions, his and ours, there may be others. The Trader must have used these dust collectors himself — not for the same purpose we intend, perhaps, but they get rid of something that he doesn't want around. So, necessarily, they'd have to be rigged to get rid of it in a dimension other than his."

We sat there drinking beer, and I started turning over that business about different dimensions in my head. I couldn't grasp the concept. Maybe Lewis was right about me being a pragmatist. If you can't see it or touch it or even guess what it would be like, how can you believe there might be another dimension? I couldn't.

So I started to talk about marketing the dust collector and before Lewis went home that night, we'd decided that the only thing left to do was sell it door to door. We even agreed to charge $12.50 for it. The zebras figured out to four cents each and we would pay our salesmen ten per cent commission, which would leave us a profit of $11.21 apiece.

I put an ad in the paper for salesmen and the next day we had several applicants. We started them out on a trial run.

Those gadgets sold like hotcakes and we knew we were in!

I QUIT my job and settled down to handling the sales end, while Lewis went back to the lab and started going through the pile of junk we had gotten from the Trader.

There are a lot of headaches running a sales campaign. You have to map out territories for your salesmen, get clearance from Better Business Bureaus, bail out your men if they're thrown in the clink for running afoul of some obscure village ordinance. There are more worrisome angles to it than you can ever imagine.

But in a couple of months' time, things were running pretty smoothly. We had the state well covered and were branching out


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into others. I had ordered another fifty thousand zebras and told them to expect re-orders—and the desk top was a busy place. It got to a point, finally, where I had to hire three men full time, paying them plenty not to talk, to man that desk top 24 hours a day. We'd send through zebras for eight hours, then take away dust gadgets for eight hours, then feed through zebras for another eight.

If the Trader had any qualms about what was happening, he gave no sign of it. He seemed perfectly happy to send us dust collectors so long as we sent him zebras.

The neighbors were curious and somewhat upset at first, but finally they got used to it. If I could have moved to some other location, I would have, for the house was more an office than a home and we had practically no family life at all. But if we wanted to stay in business, we had to stay right where we were because it was the only place we had contact with the Trader.

The money kept rolling in and I turned the management of it over to Helen and Marge. The income tax boys gave us a rough time when we didn't show manufacturing expenses, but since we weren't inclined to argue over what we had to pay, they couldn't do anything about it.

Lewis was wearing himself down to a nubbin at the lab, but he wasn't finding anything that we could use.

But he still did some worrying now and then about where all that dust was going. And he was right, probably for the first time in his life.

ONE *afternoon, a couple of* years after we'd started selling the dust collectors, I had been uptown to attend to some banking difficulties that Helen and Marge had gotten all bollixed up. I'd no more than pulled into the driveway when Helen came busting out of the house. She was covered with dust, her face streaked with it, and she was the maddest-looking woman I have ever seen.

"You've got to do something about it, Joe!" she shrieked.

"About what?"

"The dust! It's pouring into the house!"

"Where is it pouring from?"

"From *everywhere!*"

I could see she'd opened all the windows and there was dust pouring out of them, almost like a smoke cloud. I got out of the car and took a quick look up and down the street. Every house in the block had its windows open and there was dust coming out of all of them and the neighborhood was boiling with angry,



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screaming women.

"Where's Bill?" I asked.

"Out back."

I ran around the house and called him and he came running.

Marge had come across the street and, if anything, she was about six degrees sorer about all the dust than Helen was.

"Get in the car," I said.

"Where are we going?" Marge demanded.

"Out to pick up Lewis."

I must have sounded like nothing to trifle with, for they piled in and I got out of there as fast as the car would take us.

The homes and factories and stores that had bought the gadget were gushing so much dust, visibility wouldn't be worth a damn before long.

I had to wade through about two feet of dust on the laboratory floor to get to Lewis's office and hold a handkerchief over my nose to keep from suffocating.

INSIDE the car, we got our faces wiped off and most of the dust hacked out of our throats. I could see then that Lewis was about three shades paler than usual, although, to tell the truth, he always was a pasty-looking creature.

"It's the creatures from that third dimension," he said anxiously. "The place where we were sending all the dust. They got


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sick and tired of having it pour in on them and they got it figured out and now they're firing the dust right back at us."

"Now calm down. We're just jumping at the conclusion that this was caused by our gadget."

"I checked, Joe. It was. The dust is coming out in jets from every single place where we sent it through. No place else."

"Then all we have to do is fire it back at them."

He shook his head. "Not a chance. The gadget works one way now — from them to us." He coughed and looked wildly at me. "Think of it! A couple of million of those gadgets, picking up dust from a couple of million homes, stores and factories—some of them operating for two whole years! Joe, what are we going to do?"

"We're going to hole up somewhere till this—well, blows over."

Being of a nasty legal turn of mind, he probably foresaw even then the countless lawsuits that would avalanche on us. Personally, I was more scared of being mobbed by angry women.

But that's all past history. We hid out till people had quieted down and then began trying to settle the suits out of court. We had a lot of money and were able to pay off most of them. The judgments against us still outstanding don't amount to more than a few hundred thousand. We could wipe that out pretty quickly if we'd just hit on something else as profitable as the cleaning gadget.

Lewis is working hard at it, but he isn't having any luck. And the Trader is gone now. As soon as we dared come home, I went into the house and had a look at the desk. The inlaid dot was gone. I tried putting something where it had been, but nothing happened.

What scared the Trader off? I'd give a lot to know. Meanwhile, there are some commercial prospects.

The rose-tinted glasses, for instance, that we call the Happiness Lenses. Put them on and you're happy as a clam. Almost every person on the face of the Earth would like a pair of them, so they could forget their troubles for a while. They would probably play hob with the liquor business.

The trouble is that we don't know how to make them and, now that the Trader's gone, we can't swap for them.

But there's one thing that keeps worrying me. I know I shouldn't let it bother me, but I can't keep it out of mind.

Just what did the Trader do with those couple of million zebras we sent him?

—CLIFFORD D. SIMAK



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# shell game

*None of them had captured or killed a single enemy! Then whom were they at war with?*

**By PHILIP K. DICK**

**Illustrated by KOSSIN**

A sound awoke O'Keefe instantly. He threw back his covers, slid from the cot, grabbed his B-pistol from the wall and, with his foot, smashed the alarm box. High frequency waves tripped emergency bells throughout the camp. As O'Keefe burst from his house, lights already flickered on every side.

"Where?" Fisher demanded shrilly. He appeared beside O'Keefe, still in his pajamas, grubby-faced with sleep.

"Over to the right." O'Keefe leaped aside for a massive cannon being rolled from its underground storage-chambers. Soldiers were appearing among the night-clad figures. To the right lay the black bog of mists and obese foliage, ferns and pulpy onions, sunk in the half-liquid ooze that made up the surface of Betelgeuse II. Nocturnal phosphorescence danced and flitted over the bog, ghostly yellow lights snapped in the thick darkness.

"I figure," Horstokowski said,


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"they came in close to the road, but not actually on it. There's a shoulder fifty feet on each side, where the bog has piled up. That's why our radar's silent."

An immense mechanical fusing "bug" was eating its way into the mud and shifting water of the bog, leaving behind a trail of hard, smoked surface. The vegetation and the rotting roots and dead leaves were sucked up and efficiently cleared away.

"What did you see?" Portbane asked O'Keefe.

"I didn't see anything. I was sound asleep. But I *heard* them."

"Doing what?"

"They were getting ready to pump nerve gas into my house. I heard them unreeling the hose from portable drums and uncapping the pressure tanks. But, by God, I was out of the house before they could get the joints leak-tight!"

DANIELS hurried up. "You say it's a gas attack?" He fumbled for the gas mask at his belt. "Don't stand there—get your masks on!"

"They didn't get their equipment going," Silberman said. "O'Keefe gave the alarm in time. They retreated back to the bog."

"You're sure?" Daniels demanded.

"You don't smell anything, do you?"

"No," Daniels admitted. "But the odorless type is the most deadly. And you don't know you've been gased till it's too late." He put on his gas mask, just to be sure.

A few women appeared by the rows of houses—slim, large-eyed shapes in the flickering glare of the emergency searchlights. Some children crept cautiously after them.

Silberman and Horstokowski moved over in the shadows by the heavy cannon.

"Interesting," Horstokowski said. "Third gas attack this month. Plus two tries to wire bomb terminals within the camp site. They're stepping it up."

"You have it all figured out, don't you?"

"I don't have to wait for the composite to see we're getting it heavier all the time." Horstokowski peered warily around, then pulled Silberman close. "Maybe there's a reason why the radar screen didn't react. It's supposed to get everything, even knocker-bats."

"But if they came in along the shoulder, like you said—"

"I just said that as a plant. *There's somebody waving them in, setting up interference for the radar.*"

"You mean one of *us?*"

Horstokowski was intently watching Fisher through the



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moist night gloom. Fisher had moved carefully to the edge of the road, where the hard surface ended and the slimy, scorched bog began. He was squatting down and rooting in the ooze.

"What's he doing?" Horstokowski demanded.

"Picking up something," Silberman said indifferently. "Why not? He's supposed to be looking around, isn't he?"

"Watch," Horstokowski warned. "When he comes back, he's going to pretend nothing happened."

PRESENTLY, Fisher returned, walking rapidly and rubbing the muck from his hands.

Horstokowski intercepted him. "What'd you find?"

"Me?" Fisher blinked. "I didn't find anything."

"Don't kid me! You were down on your hands and knees, grubbing in the bog."

"I—thought I saw something metal, that's all."

A vast inner excitement radiated through Horstokowski. He had been right.

"Come on!" he shouted. "What'd you find?"

"I thought it was a gas pipe," Fisher muttered. "But it was only a root. A big, wet root."

There was a tense silence.

"Search him," Portbane ordered.

Two soldiers grabbed Fisher. Silberman and Daniels quickly searched him.

They spilled out his belt pistol, knife, emergency whistle, automatic relay checker, geiger counter, pulse tab, medical kit and identification papers. There was nothing else.

The soldiers let him go, disappointed, and Fisher sullenly collected his things.

"No, he didn't find anything," Portbane stated. "Sorry, Fisher. We have to be careful. We have to watch all the time, as long as they're out there, plotting and conspiring against us."

Silberman and Horstokowski exchanged glances, then moved quietly away.

"I think I get it," Silberman said softly.

"Sure," Horstokowski answered. "He *hid* something. We'll dig up that section of bog he was poking around in. I think maybe we'll find something interesting." He hunched his shoulders combatively. "I knew somebody was working for them, here in the camp. A spy for Terra."

Silberman started. "Terra? Is that who's attacking us?"

"Of course that's who."

There was a puzzled look on Silberman's face.

"Seemed to me we're fighting somebody else."

Horstokowski was outraged.



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"For instance?"

Silberman shook his head. "I don't know. I didn't think about who so much as what to do about it. I guess I just took it for granted they were aliens."

"And what do you think those Terran monkey men are?" Horstokowski challenged.

THE weekly Pattern Conference brought together the nine leaders of the camp in their reinforced underground conference chamber. Armed guards protected the entrance, which was sealed tight as soon as the last leader had been examined, checked over and finally passed.

Domgraf-Schwach, the conference chairman, sat attentively in his deep chair, one hand on the Pattern composite, the other on the switch that could instantly catapult him from the room and into a special compartment, safe from attack. Portbane was making his routine inspection of the chamber, examining each chair and desk for scanning eyes. Daniels sat with eyes fixed on his geiger counter. Silberman was completely encased in an elaborate steel and plastic suit, configured with wiring, from which continual whirrings came.

"What in God's name is that suit of armor?" Domgraf-Schwach asked angrily. "Take it off so we can see you."

"Nuts to you," Silberman snapped, his voice muted by his intricate hull. "I'm wearing this from now on. Last night, somebody tried to jab me with bacteria-impregnated needles."

Lanoir, who was half-dozing at his place, came alive. "Bacteria-impregnated needles?" He leaped up and hurried over to Silberman. "Let me ask you if—"

"*Keep away from me!*" Silberman shouted. "If you come any closer, I'll electrocute you!"

"The attempt I reported last week," Lanoir panted excitedly, "when they tried to poison the water supply with metallic salts. It occurred to me their next method would be bacterial wastes, filterable virus we couldn't detect until actual outbreak of disease." From his pocket, he yanked a bottle and shook out a handful of white capsules. One after another, he popped the capsules into his mouth.

Every man in the room was protected in some fashion. Each chose whatever apparatus conformed to his individual experience. But the totality of defense-systems was integrated in the general Pattern planning. The only man who didn't seem busy with a device was Tate. He sat pale and tense, but otherwise unoccupied. Domgraf-Schwach made a mental note—Tate's confidence-level was unusually high.



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It suggested he somehow felt safe from attack.

"No talking," Domgraf-Schwach said. "Time to start."

He had been chosen as chairmanship by the turn of a wheel. There was no possibility of subversion under such a system. In an isolated, autonomous colony of sixty men and fifty women, such a random method was necessary.

"Daniels will read the week's Pattern composite," Domgraf-Schwab ordered.

"Why?" Portbane demanded bluntly. "We were the ones who put it together. We all know what's in it."

"For the same reason it's always read," Silberman answered. "So we'll know it wasn't tampered with."

"Just the summation!" Horstokowski said loudly. "I don't want to stay down here in this vault any longer than I have to."

"Afraid somebody'll fill up the passage?" Daniels jeered. "There are half a dozen emergency escape exits. You ought to know—you insisted on every one of them."

"Read the summation," Lanoir demanded.

DANIELS cleared his throat. "During the last seven days, there were eleven overt attacks in all. The main attack was on our new class-A bridge network, which was sabotaged and wrecked. The struts were weakened and the plastic mix that served as base material was diluted, so that when the very first convoy of trucks passed over it, the whole thing collapsed."

"We know that," Portbane said gloomily.

"Loss consisted of six lives and considerable equipment. Troops scoured the area for a whole day, but the saboteurs managed to escape. Shortly after this attack, it was discovered that the water supply was poisoned with metallic salts. The wells were therefore filled and new ones drilled. Now all our water passes through filter and analysis systems."

"I boil mine," Lanoir added feelingly.

"It's agreed by everyone that the frequency and severity of attacks have been stepped up." Daniels indicated the massive wall charts and graphs. "Without our bomb-proof screen and our constant detection network, we'd be overwhelmed tonight. The real question is—*who are our attackers?*"

"Terrans," Horstokowski said.

Tate shook his head. "Terrans, hell! What would monkey men be doing out this far?"

"We're out this far, aren't we?" Lanoir retorted. "And we were Terrans once."



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"Never!" Fisher shouted. "Maybe we lived on Terra, but we aren't Terrans. We're a superior mutant race."

"Then who are they?" Horstokowski insisted.

"They're other survivors from the ship," Tate said.

"How do you know?" asked Silberman. "Have you ever seen them?"

"*We salvaged no lifeboats, remember?* They must have blasted off in them."

"If they were isolated survivors," O'Keefe objected, "they wouldn't have the equipment and weapons and machines they're using. They're a trained, integrated force. We haven't been able to defeat them or even *kill* any of them in five years. That certainly shows their strength."

"We haven't tried to defeat them," Fisher said. "We've only tried to defend ourselves."

A sudden tense silence fell over the nine men.

"You mean the ship," Horstokowski said.

"It'll be up out of the bog soon," Tate replied. "And then we'll have something to show them—something they'll remember."

"Good God!" Lanoir exclaimed, disgusted. "The ship's a wreck—the meteor completely smashed it. What happens when we do get it up? We can't operate it unless we can completely rebuild it."

"If the monkey men could build the thing," Portbane said, "we can repair it. We have the tools and machinery."

"And we've finally located the control cabin," O'Keefe pointed out. "I see no reason why we can't raise it."

There was an abrupt change of expression on Lanoir's face. "All right, I withdraw my objections. Let's get it up."

"What's your motive?" Daniels yelled excitedly. "You're trying to put something over on us!"

"He's planning something," Fisher furiously agreed. "Don't listen to him. Leave the damn thing down there!"

"Too late for that," O'Keefe said. "It's been rising for weeks."

"You're in with him!" Daniels screeched. "Something's being put over on us!"

THE ship was a dripping, corroded ruin. Slime poured from it as the magnetic grapples dragged it from the bog and onto the hard surface that the fusing bugs had laid down.

The bugs burned a hard track through the bog, out to the control cabin. While the lift suspended the cabin, heavy reinforced plastic beams were slid under it. Tangled weeds, matted like ancient hair, covered the



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globular cabin in the midday sun, the first light that had struck it in five years.

"In you go," Domgraf-Schwach said eagerly.

Portbane and Lanoir advanced over the fused surface to the moored control cabin. Their handlights flashed ominously yellow around the steaming walls and encrusted controls. Livid eels twisted and convulsed in the thick pools underfoot. The cabin was a smashed, twisted ruin. Lanoir, who was first, motioned Portbane impatiently after him.

"*You* look at these controls—you're the engineer."

Portbane set down his light on a sloping heap of rusted metal and sloshed through the knee-deep rubbish to the demolished control panel. It was a maze of fused, buckled machinery. He squatted down in front of it and began tearing away the pitted guard-plates.

Lanoir pushed open a supply closet and brought down metal-packed audio and video tapes. He eagerly spilled open a can of the video and held a handful of frames to the flickering light. "Here's the ship's data. Now I'll be able to prove there was nobody but us aboard."

O'Keefe appeared at the jagged doorway. "How's it coming?"

Lanoir elbowed past him and out on the support boards. He deposited a load of tape-cans and returned to the drenched cabin. "Find anything on the controls?" he asked Portbane.

"Strange," Portbane murmured.

"What's the matter?" Tate demanded. "Too badly wrecked?"

"There are lots of wires and relays. Plenty of meters and power circuits and switches. But no controls to operate them."

Lanoir hurried over. "There must be!"

"For repairs, you have to remove all these plates—practically dismantle the works to even see them. Nobody could sit here and control the ship. There's nothing but a smooth, sealed shell."

"Maybe this wasn't the control cabin," Fisher offered.

"This is the steering mechanism—no doubt about that." Portbane pulled out a heap of charred wiring. "But all this was self-contained. They're robot controls. Automatic."

They looked at each other.

"Then we were prisoners," Tate said, dazed.

"Whose?" Fisher asked baffledly.

"The Terrans!" Lanoir said.

"I don't get it," Fisher muttered vaguely. "*We* planned the whole flight—didn't we? *We* broke out of Ganymede and got away."

"Get the tapes going," Port-



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bane said to Lanoir. "Let's see what's in them."

DANIELS snapped the vidtape scanner off and raised the light.

"Well," he said, "you saw for yourselves this was a hospital ship. It carried no crew. It was directed from a central guide-beam at Jupiter. The beam carried it from the Sol System here, where, because of a mechanical error, a meteor penetrated the protection screen and the ship crashed."

"And if it hadn't crashed?" Domgraf-Schwach asked faintly.

"Then we would have been taken to the main hospital at Fomalhaut IV."

"Play the last tape again," Tate urged.

The wall-speaker spluttered and then said smoothly: "The distinction between paranoids and paranoiac syndromes in other psychotic personality disorders must be borne in mind when dealing with these patients. The paranoid retains his general personality structure unimpaired. Outside of the region of his complex, he is logical, rational, even brilliant. He can be talked to—he can discuss himself—he is aware of his surroundings.

"The paranoid differs from other psychotics in that he remains actively oriented to the outside world. He differs from so-called normal personality types in that he has a set of fixed ideas, false postulates from which he has relentlessly constructed an elaborate system of beliefs, logical and consistent with these false postulates."

Shakily, Daniels interrupted the tape. "These tapes were for the hospital authorities on Fomalhaut IV. Locked in a supply closet in the control cabin. The control cabin itself was sealed off from the rest of the ship. None of us was able to enter it."

"The paranoid is totally rigid," the calm voice of the Terran doctor continued. "His fixed ideas cannot be shaken. They dominate his life. He logically weaves all events, all persons, all chance remarks and happenings, into his system. He is convinced the world is plotting against him—that he is a person of unusual importance and ability against whom endless machinations are directed. To thwart these plots, the paranoid goes to infinite lengths to protect himself. He repeatedly vidtapes the authorities, constantly moves from place to place and, in the dangerous final phases, may even become—"

Silberman snapped it off savagely and the chamber was silent. The nine leaders of the camp sat unmoving in their places.

"We're a bunch of nuts," Tate



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said finally. "A shipload of psychos who got wrecked by a chance meteor."

"Don't kid yourself," Horstokowski snapped. "There wasn't anything chance about that meteor."

Fisher giggled hysterically. "More paranoid talk. Good God, all these attacks—hallucinations—all in our minds!"

LANOIR poked vaguely at the piles of tape. "What are we to believe? *Are there any attackers?*"

"We've been defending ourselves against them for five years!" Portbane retorted. "Isn't that proof enough?"

"Have you ever seen them?" Fisher asked slyly.

"We're up against the best agents in the Galaxy. Terran shock troops and military spies, carefully trained in subversion and sabotage. They're too clever to show themselves."

"They wrecked the bridge-system," O'Keefe said. "It's true we didn't see them, but the bridge is sure as hell in ruins."

"Maybe it was badly built," Fisher pointed out. "Maybe it just collapsed."

"Things don't 'just collapse'! There's a reason for all these things that have been happening."

"Like what?" Tate demanded.

"Weekly poison gas attacks," Portbane said. "Metallic wastes in the water supply, to name only two."

"And bacteriological crystals," Daniels added.

"Maybe none of these things exist," Lanoir argued. "But how are we to prove it? If we're all insane, *how would we know?*"

"There are over a hundred of us," Domgraf-Schwach said. "We've all experienced these attacks. Isn't that proof enough?"

"A myth can be picked up by a whole society, believed and taught to the next generation. Gods, fairies, witches—believing a thing doesn't make it true. For centuries, Terrans believed the Earth was flat."

"If all foot-rulers grow to thirteen inches," Fisher asked, "how would anybody know? One of them would have to stay twelve inches long, a non-variable, a constant. We're a bunch of inaccurate rulers, each thirteen inches long. We need one non-paranoid for comparison."

"Or maybe this is all part of their strategy," Siberman said. "Maybe they rigged up that control cabin and planted those tapes there."

"This ought to be no different from trying to test any belief," Portbane explained. "What's the characteristic of a scientific test?"

"It can be duplicated," Fisher said promptly. "Look, we're go-



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ing around in circles. *We're trying to measure ourselves.* You can't take your ruler, either twelve inches or thirteen inches long, and ask it to measure itself. No instrument can test its own accuracy."

"Wrong," Portbane answered calmly. "I can put together a valid, objective test."

"There's no such test!" Tate shouted excitedly.

"There sure as hell is. And inside of a week, I'll have it set up."

"GAS!" the soldier shouted. On all sides, sirens wailed into life. Women and children scrambled for their masks. Heavy-duty cannon rumbled up from subsurface chambers and took up positions. Along the perimeter of the bog, the fusing bugs were searing away a ribbon of muck. Searchlights played out into the fern-thick darkness.

Portbane snapped off the cock of the steel tank and signaled the workmen. The tank was rolled quickly away from the sea of mud and seared weeds.

"All right," Portbane gasped. "Get it below."

He emerged in the subsurface chamber as the cylinder was being rolled into position.

"That cylinder," Portbane said, "should contain hydrocyanic vapor. It's a sampling made at the site of the attack."

"This is useless," Fisher complained. "They're attacking and here we stand!"

Portbane signaled the workmen and they began laying out the test apparatus. "There will be two samples, precipitates of different vapors, each clearly marked and labeled A and B. One comes from the cylinder filled at the scene of the attack. The other is condensed from air taken out of this room."

"Suppose we describe both as negative?" Silberman asked worriedly. "Won't that throw your test off?"

"Then we'll take more tests. After a couple of months, if we still haven't got anything but negative findings, then the attack hypothesis is destroyed."

"We may see both as positive," Tate said, perplexed.

"In that case, we're dead right now. If we see both samples as positive, I think the case for the paranoid hypothesis has been proved."

After a moment, Domgraf-Schwach reluctantly agreed. "One is the control. If we maintain that it isn't possible to get a control sample that is free of hydrocyanic acid . . ."

"Pretty damn slick," O'Keefe admitted. "You start from the one known factor—our own existence. We can't very well doubt *that*."

"Here are all the choices,"



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Portbane said. "Both positive means we're psychotic. Both negative means either the attack was a false alarm or there are no attackers. One positive and one negative would indicate there are real attackers, that we're fully sane and rational." He glanced around at the camp leads. "*But we'll all have to agree which sample is which.*"

"Our reactions will be recorded secretly?" Tate asked.

"Tabulated and punched by the mechanical eye. Tallied by machinery. Each of us will make an individual discrimination."

AFTER a pause, Fisher said, "I'll try it." He came forward, leaned over the colorimeter and studied the two samples intently. He alternated them for a time and then firmly grabbed the check-stylus.

"You're sure?" Domgraf-Schwach asked. "You really know which is the negative control sample?"

"I know." Fisher noted his findings on the punch sheet and moved away.

"I'm next," Tate said, impatiently pushing up. "Let's get this over with."

One by one, the men examined the two samples, recorded their findings, and then moved off to stand waiting uneasily.

"All right," Portbane said finally. "I'm the last one." He peered down briefly, scribbled his results, then pushed the equipment away. "Give me the readings," he told the workmen by the scanner.

A moment later, the findings were flashed up for everyone to see.

| | |
|---|---|
| Fisher | A |
| Tate | A |
| O'Keefe | B |
| Horstokowski | B |
| Silberman | B |
| Daniels | B |
| Portbane | A |
| Domgraf-Schwach | B |
| Lanoir | A |

"I'll be damned," Silberman said softly. "As simple as that. We're paranoids."

"You cluck!" Tate shouted at Horstokowski. "It was A, not B! How the hell could you get it wrong?"

"B was as bright as a searchlight!" Domgraf-Schwach answered furiously. "A was completely colorless!"

O'Keefe pushed forward. "Which was it, Portbane? Which was the positive sample?"

"I don't know," Portbane confessed. "How could any of us be sure?"

THE buzzer on Domgraf-Schwach's desk clicked and he snapped on the vidscreen.



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The face of a soldier-operator appeared. "The attack's over, sir. We drove them away."

Domgraf-Schwach smiled ironically. "Catch any of them?"

"No, sir. They slipped back into the bog. I think we hit a couple, though. We'll go out tomorrow and try to find the corpses."

"You think you'll find them?"

"Well, the bog usually swallows them up. But maybe this time—"

"All right," Domgraf-Schwach interrupted. "If this turns out to be an exception, let me know." He broke the circuit.

"Now what?" Daniels inquired icily.

"There's no point in continuing work on the ship," O'Keefe said. "Why waste our time bombing empty bogs?"

"I suggest we keep working on the ship," Tate contradicted.

"Why?" O'Keefe asked.

"So we can head for Fomalhaut and give ourselves up to the hospital station."

Silberman stared at him incredulously. "Turn ourselves in? Why not stay here? We're not harming anybody."

"No, not yet. It's the future I'm thinking of, centuries from now."

"We'll be dead."

"Those of us in this room, sure, but what about our descendants?"

"He's right," Lanoir conceded. "Eventually our descendants will fill this whole solar system. Sooner or later, our ships might spread over the Galaxy." He tried to smile, but his muscles would not respond. "The tapes point out how tenacious paranoids are. They cling fanatically to their fixed beliefs. If our descendants expand into Terran regions, there'll be a fight and we might win because we're more one-track. We would never deviate."

"Fanatics," Daniels whispered.

"We'll have to keep this information from the rest of the camp," O'Keefe said.

"Absolutely," Fisher agreed. "We'll have to keep them thinking the ship is for H-bomb attacks. Otherwise, we'll have one hell of a situation on our hands."

They began moving numbly toward the sealed door.

"Wait a minute," Domgraf-Schwach said urgently. "The two workmen." He started back, while some of them went out into the corridor, the rest back toward their seats.

And then it happened.

SILBERMAN fired first. Fisher screamed as half of him vanished in swirling particles of radioactive ash. Silberman dropped to his one knee and fired up at Tate. Tate leaped back and



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brought out his own B-pistol. Daniels stepped from the path of Lanoir's beam. It missed him and struck the first row of seats.

Lanoir calmly crept along the wall through the billowing clouds of smoke. A figure loomed ahead; he raised his gun and fired. The figure fell to one side and fired back. Lanoir staggered and collapsed like a deflated balloon and Silberman hurried on.

At his desk, Domgraf-Schwach was groping wildly for his escape button. His fingers touched it, but as he depressed the stud, a blast from Portbane's pistol removed the top of his head. The lifeless corpse stood momentarily, then was whisked to "safety" by the intricate apparatus beneath the desk.

"This way!" Portbane shouted, above the sizzle of the B-blasts. "Come on, Tate!"

Various beams were turned in his direction. Half the chamber burst apart and thundered down, disintegrating into rubble and flaming debris. He and Tate scrambled for one of the emergency exits. Behind them, the others hurried, firing savagely.

Horstokowski found the exit and slid past the jammed lock. He fired as the two figures raced up the passage ahead of him. One of them stumbled, but the other grabbed at him and they hobbled off together. Daniels was a better shot. As Tate and Portbane emerged on the surface, one of Daniels' blasts undercut the taller of the two.

Portbane continued running a little way, and then silently pitched face-forward against the side of a plastic house, a gloomy square of opaque blackness against the night sky.

"Where'd they go?" Silberman demanded hoarsely, as he appeared at the mouth of the passage. His right arm had been torn away by Lanoir's blast. The stump was seared hard.

"I got one of them." Daniels and O'Keefe approached the inert figure warily. "It's Portbane. That leaves Tate. We got three of the four. Not bad, on such short notice."

"Tate's damn smart," Silberman panted. "I think he suspected."

He scanned the darkness around them. Soldiers, returning from the gas attack, came hurrying up. Searchlights rumbled toward the scene of the shooting. Off in the distance, sirens wailed.

"Which way did he go?" Daniels asked.

"Over toward the bog."

O'KEEFE moved cautiously along the narrow street. The others came slowly behind.

"You were the first to realize,"



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Horstokowski said to Silberman. "For a while, I believed the test. Then I realized we were being tricked—the four of them were plotting in unison."

"I didn't expect four of them," Silberman admitted. "I knew there was at least *one* Terran spy among us. But Lanoir . . . "

"I always knew Lanoir was a Terran agent," O'Keefe declared flatly. "I wasn't surprised at the test results. They gave themselves away by faking their findings."

Silberman waved over a group of soldiers. "Have Tate picked up and brought here. He's somewhere at the periphery of the camp."

The soldiers hurried away, dazed and muttering. Alarm bells dinned shrilly on all sides. Figures scampered back and forth. Like a disturbed ant colony, the whole camp was alive with excitement.

"In other words," Daniels said, "the four of them really saw the same as we. They saw B as the positive sample, but they put down A instead."

"They knew we'd put down B," O'Keefe said, "since B was the positive sample taken from the attack site. All they had to do was record the opposite. The results seemed to substantiate Lanoir's paranoid theory, which was why Portbane set up the test in the first place. It was planned a long time ago—part of their overall job."

"Lanoir dug up the tapes in the first place!" Daniels exclaimed. "Fisher and he planted them down in the ruins of the ship. Portbane got us to accept his testing device."

"What were they trying to do?" Silberman asked suddenly. "Why were they trying to convince us we're paranoids?"

"Isn't it obvious?" O'Keefe replied. "They wanted us to turn ourselves in. The Terran monkey men naturally are trying to choke off the race that's going to supplant them. We won't surrender, of course. The four of them were clever—they almost had me convinced. When the results flashed up five to four, I had a momentary doubt. But then I realized what an intricate strategy they had worked out."

Horstokowski examined his B-pistol. "I'd like to get hold of Tate and wring the whole story from him, the whole damn account of their planning, so we'd have it in black and white."

"You're still not convinced?" Daniels inquired.

"Of course. But I'd like to hear him admit it."

"I doubt if we'll see Tate again," O'Keefe said. "He must have reached the Terran lines by now. He's probably sitting in a big inter-system military trans-



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port, giving his story to gold-braid Terran officials. I'll bet they're moving up heavy guns and shock troops while we stand here."

"We'd better get busy," Daniels said sharply. "We'll repair the ship and load it with H-bombs. After we wipe out their bases here, we'll carry the war to them. A few raids on the Sol System ought to teach them to leave us alone."

Horstokowski grinned. "It'll be an uphill fight—we're alone against a whole galaxy. But I think we'll take care of them. One of us is worth a million Terran monkey men."

TATE lay trembling in the dark tangle of weeds. Dripping black stalks of nocturnal vegetables clutched and stirred around him. Poisonous night insects slithered across the surface of the fetid bog.

He was covered with slime. His clothing was torn and ripped. Somewhere along the way, he had lost his B-pistol. His right shoulder ached; he could hardly move his arm. Bones broken, probably. He was too numb and dazed to care. He lay face-down in the sticky muck and closed his eyes.

He didn't have a chance. Nobody survived in the bogs. He feebly smashed an insect oozing across his neck. It squirmed in his hand and then, reluctantly, died. For a long time, its dead legs kicked.

The probing stalk of a stinging snail began tracing webs across Tate's inert body. As the sticky pressure of the snail crept heavily onto him, he heard the first faint far-off sounds of the camp going into action. For a time, it meant nothing to him. Then he understood—and shuddered miserably, helplessly.

The first phase of the big offensive against Earth was already moving into high gear.

—PHILIP K. DICK


**THE HUMANOIDS** **By JACK WILLIAMSON**

Would perfect, omnipresent robots, who would do all the work for the human race and release people for purely creative activities, be good for us? Is the old saw true, that unending toil is the lot of man and that without work the human being would become a listless, hedonistic, degenerate thing? Or can a future be envisaged in which mankind has advanced, through psychological and mental training, to a point where he can surmount his own baser nature and become truly a rational and happy being, to whom leisure is a creative boon?

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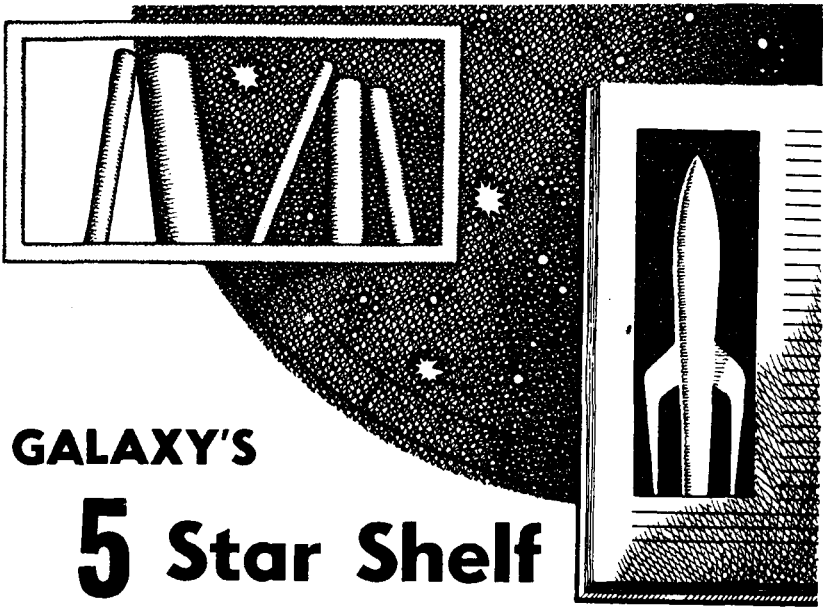

# GALAXY'S 5 Star Shelf

*BRAIN WAVE by Poul Anderson. Ballantine Books, cloth* $2.50, *paper* 35c

EXCEPT for a rather fumbling ending, this is one of the best of the Ballantine science fiction novels.

Imagine a situation in which the Earth moves, in the normal course of events, out of a region of the Galaxy containing radiations that have, for uncounted millions of years, slightly damped the electromagnetic phenomena of our world, into an area entirely free of such radiations. And consider how such a speeding up of the electromagnetic forces might react on the minute neurones of the brain.

Anderson postulates that, in such a situation, intelligence levels would increase about 250%—including every kind of animal as well as human beings. The author further assumes that the change cannot affect animals' or people's glandular reactions, their emotions, their fears or their desires. These grosser functions remain as they always have been. The results are awesome.

It is an original idea and is brilliantly carried out in a dramatic counterpoint of what hap-



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pens to pigs, biochemists, rabbits, farmhands, religious fanatics, dogs, morons, sociologists, tigers, physicists — and civilization.

In the end, the development seems to me to become too grandiose and almost fuzzy, but I think you will agree that, on the whole, this is a first-rate book.

*HUMAN? edited by Judith Merril. Lion Books,* 25c

SCIENCE fiction's only lady anthologist is also one of the best in the business—mainly because she follows none of the established patterns.

Her newest contains 15 stories and the main characters in every one of them definitely rate the question mark after the one-word title. Eight of the tales score A and 6 are B on my scale of values, and there is enough variety to satisfy the most jaded appetite.

Six of the tales have appeared in books by their authors, though none in anthology. Unfortunately, there is no indication of the previous book appearances in the cases of Sprague de Camp and Theodore Sturgeon.

The author list includes Don Marquis, H. G. Wells and John Collier, as well as the two mentioned above, plus Eric Frank Russell, Isaac Asimov, John D. MacDonald, Iris Seabright (whose "Egg a Month from All Over" is my favorite in the collection), Fritz Leiber, Algis Budrys, August Derleth, Graham Doar, and Walter M. Miller, Jr.

Like all the previous Merril collections, this book contains a number of items from the fantasy side of the ledger (Marquis, Wells, Collier, Sturgeon), but this is okay by me, and I think it will be by you.

*LOST CONTINENTS by L. Sprague de Camp. Gnome Press,* $5.00

IF there is anything you want to know about the cults of Mu, Atlantis, Lemuria, Gondwanaland; if you are curious about the magnificent idiocies of Theosophy, Rosicrucianism, and a couple of dozen other occult cosmogonies; if you want, in short, to have a richly documented and entertaining survey of how crazy the crackpots can get, this is the book for you.

I found it enthralling from first page to last—and that's a lot of pages, 360 of them. It covers everyone from Plato to Ignatius Donnelly, from Ortelius to Velikovsky, from Francis Bacon to the pathetic and pitiable Richard Shaver.

A monument of scholarship, the book is at the same time thoroughly readable. It should be on every science fiction writer's



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reference shelf—and on that of every reader who is at all interested in the subject.

*OF ALL POSSIBLE WORLDS by William Tenn. Ballantine Books,* 35c

ABOUT the best part of this rather various collection of Tenn short stories is its introduction, "The Fiction in Science Fiction"—a sound and judicious look at modern science fiction's problems and possibilities by a partisan yet still critical practitioner in the field.

The seven short stories and novelets included in the book are all peculiarly Tenn, all readable, and several first-rate. The very best of Tenn, however, has appeared in other editors' anthologies, and none of the stories in this collection has ever seen book publication before.

This means that farces like "Liberation of Earth" and "Everybody Loves Irving Bommer"—not among Tenn's top ten—are run in along with such excellent items as "The Tenants," "The Custodian," "The Remarkable Flirgleflip," and so on.

Still, it is eminently worth the price.

*THE SECOND CONQUEST by Louis de Wohl. J. B. Lippincott Co.,* $3.00

THIS is unquestionably one of the most *peculiar* items in the whole history of science fiction. It is, absolutely literally, the struggle between God and the Devil to take over the Martians. And, in addition, it is one of the most ineptly done pieces of romantic theology I have ever read.

You start out with a *privately* invented spaceship. It's powered by the fuel "celestium," which has been stolen from a wrecked Flying Saucer. You have a girl stowaway. And you have God's representative, in the person of Chris, the pilot; the man who is possessed of the Devil in Marmon, the evil promoter; and blind and stupid science in Brandeis, the technician. Who the girl is, I haven't yet figured out—not Eve, certainly.

The Martians, nice people though they are, have never learned about Good and Evil, and that is almost too bad for them. They nearly "fall," just as did the human race in Eden. However, the Man of God (Chris) wins in the end, and Mars—and our world, too—is saved, for the time being, at least.

Religion and science fiction are not at all incompatible, any more than religion and science are. But a noble theme is no excuse for poor craftsmanship.



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*GATEWAY TO ELSEWHERE by Murray Leinster; THE WEAPON SHOPS by A. E. van Vogt. Ace Books,* 35c

THE third bargain in Don Wollheim's new paper book series contains one of van Vogt's best super-duper tales (if you haven't read it before, don't miss it here!) and a Leinster never before published in book form, though it should have been.

*Gateway to Elsewhere,* which had magazine publication in 1951, is a very light, lively and amusing pastiche on one of the author's favorite ideas, the complications resulting from interconnections between two parallel worlds.

Here he imagines a world, parallel to ours, in which djinns and efreets are real and have their own highly individual characteristics. There is also a pleasant young this-world hero, name of Tony Gregg, who has a bothersome New England conscience, which nevertheless does not inhibit him much.

A richly contrived plot makes this improbable assortment of characters into a very acceptable way of passing a couple of relaxing hours.

*THE MARS PROJECT by Wernher von Braun. University of Illinois Press,* $3.95

IN addition to being one of the most beautifully designed and printed books of 1953 (it was chosen as one of the 50 best books of the year by the American Institute of Graphic Arts), this slim —under 100 pages—volume is also a valuable though highly technical report on the innumerable problems, and some of the possibilities, of interplanetary flight.

It really is not for laymen, but for engineers and similarly pretrained people. However, even the ordinary reader can, if he is sufficiently interested and knows how to skip judiciously, get a vivid picture of what one of the world's top experts on the subject thinks a project for a flight to Mars—and the flight itself, round trip—would involve.

The book is based on material by von Braun that appeared in the German magazine *Weltraumfahrt* in 1952.

*SCIENCE AND SORCERY, edited by Garret Ford. Fantasy Publishing Co., Inc.,* $3.00

ALL but five of the fifteen stories in this book are completely unsuitable for publication in any form, book or otherwise.

Of the five good ones, those by Ray Bradbury and Cordwainer Smith (the unforgettable "Scanners Die in Vain") have been



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previously anthologized. The delightful fable by Isaac Asimov and James MacCreigh called "The Little Man on the Subway," Alfred Coppel's good but rather obvious "What Goes Up," and Robert Ernest Gilbert's surprisingly effective bucolic terror tale called "Footprints" are all worth reading.

Of the rest, the less said, the better.

*A HANDBOOK OF SCIENCE FICTION AND FANTASY by Donald H. Tuck. Available at* $1.50 *from Howard DeVore,* 4705 *Weddel Street, Dearborn, Mich.*

ANYONE who makes science fiction a serious hobby will almost *have* to have this remarkable book. It is a 155-page volume, 8 by 12½ inches in size, which was compiled and beautifully mimeographed by a devoted amateur who lives in Hobart, Tasmania, an island province of Australia.

Its first 107 pages consist of an encyclopedic listing of important books, authors, magazines, and story series, all with brief descriptive notes and biographies —the tables of contents of all anthologies are given in full!

The appendices contain lists of all the pertinent magazines, dead or alive, with charts of every issue of each one published to mid-1953; pseudonyms; paperbooks (most of them not in the first section of the book); names and addresses of book and magazine publishers in the field; and a supplementary list of authors, mainly addenda to the names in the first encyclopedic part.

Even though not absolutely complete, the book nevertheless is worth its very low price.

*Note.* Crown Publishers, Inc., have put out *The Second Galaxy Science Fiction Reader,* edited by one H. L. Gold. The price is $3.50 for over 500 pages of wonderful stuff. It contains 31 of GALAXY's best stories since the *First Reader* came out, early in 1952. This is an excellent way of preserving favorite tales in hardbound form.

—GROFF CONKLIN

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# MILK RUN

**By ROBERT SHECKLEY**

***What are Smags, Firgels and Queels? Cats in a bag . . . and Gregor was holding the bag!***

"WE can't pass it up," Arnold was saying. "Millions in profits, small initial investment, immediate return. Are you listening?"

Richard Gregor nodded wearily. It was a very dull day in the offices of the AAA Ace Interplanetary Decontamination Service, exactly like every other day. Gregor was playing solitaire. Arnold, his partner, was at his desk, his feet propped on a pile of unpaid bills.

Shadows moved past their glass door, thrown by people going to Mars Steel, Neo-Roman Novelties, Alpha Dura Products, or any other offices on the same floor.

But nothing broke the dusty silence in AAA Ace.

"What are we waiting for?" Arnold demanded loudly. "Do we do it or don't we?"

"It's not our line," Gregor said. "We're planetary decontaminationists. Remember?"

"But no one wants a planet decontaminated," Arnold stated.

That, unfortunately, was true. After successfully cleansing Ghost V of imaginary monsters, AAA Ace had had a short rush of business. But then expansion into space had halted. People were busy consolidating their gains, building towns, plowing fields, constructing roads.

**Illustrated by DICK FRANCIS**



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The movement would begin again. The human race would expand as long as there was anything to expand into. But, for the moment, business was terrible.

"Consider the possibilities," Arnold said. "Here are all these people on their bright, shiny new worlds. They need farm and food animals shipped from home—" he paused dramatically—"by us."

"We're not equipped to handle livestock," Gregor pointed out.

"We have a ship. What else do we need?"

"Everything. Mostly knowledge and experience. Transporting live animals through space is extremely delicate work. It's a job for experts. What would you do if a cow came down with hoof-and-mouth-disease between here and Omega IV?"

ARNOLD said confidently, "We will ship only hardy, mutated species. We will have them medically examined. And I will personally sterilize the ship before they come on board."

"All right, dreamer," Gregor said. "Prepare yourself for the blow. The Trigale Combine does all animal shipping in this sector of space. They don't look kindly upon competitors — therefore, they have no competitors. How do you plan to buck them?"

"We'll undersell them."

"And starve."

"We're starving now," Arnold said.

"Starving is better than being 'accidentally' holed by a Trigale tug at the port of embarkation. Or finding that someone has loaded our water tanks with kerosene. Or that our oxygen tanks were never filled at all."

"What an imagination you have!" Arnold said nervously.

"Those figments of my imagination have already happened. Trigale wants to be alone in the field and it is. By accident, you might say, if you like gory gags."

Just then, the door opened. Arnold swung his feet off the desk and Gregor swept his cards into a drawer.

Their visitor was an outworlder, to judge by his stocky frame, small head and pale green skin. He marched directly up to Arnold.

"They'll be at the Trigale Central Warehouse in three days," he said.

"So soon, Mr. Vens?" Arnold asked.

"Oh, yes. Had to transport the Smags pretty carefully, but the Queels have been on hand for several days."

"Fine. This is my partner," Arnold said, turning to Gregor, who was blinking rapidly.

"Happy." Vens shook Gregor's hand firmly. "Admire you men. Free enterprise, competition—be-



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lieve in it. You've got the route?"

"All taped," Arnold said. "My partner is prepared to blast off at any moment."

"I'll go directly to Vermoine II and meet you there. Good show."

He turned and left.

GREGOR said slowly, "Arnold, what have you done?"

"I've been making us rich, that's what I've done," Arnold retorted.

"Shipping livestock?"

"Yes."

"In Trigale territory?"

"Yes."

"Let me see the contract."

Arnold produced it. It stated that the AAA Ace Planetary Decontamination (and Transportation) Service promised to deliver five Smags, five Firgels and ten Queels to the Vermoine solar system. Pickup was to be made at the Trigale Central Warehouse, delivery to Main Warehouse, Vermoine II. AAA Ace also had the option of building its own warehouse.

Said animals were to arrive intact, alive, healthy, happy, productive, etcetera. There were heavy forfeiture clauses in event of loss of animals, their arrival unalive, unhealthy, unproductive, etcetera.

The document read like a temporary armistice between unfriendly nations.

"You actually signed this death warrant?" Gregor asked incredulously.

"Sure. All you have to do is pick up the beasts, pop over to Vermoine and drop them."

"*I?* And what will *you* be doing?"

"I'll be right here, backing you all the way," Arnold said.

"Back me aboard ship."

"No, no — impossible. I get deathly sick at the very sight of a Queel."

"And that's how I feel about this deal. Let's stick *your* neck out for a change."

"But I'm the research department," Arnold objected, perspiring freely. "We set it up that way. Remember?"

Gregor remembered, sighed and shrugged his shoulders helplessly.

They began at once to put their ship in order. The hold was divided into three compartments, each to carry a separate species. All were oxygen breathers and all could sustain life at about seventy degrees Fahrenheit, so that was no problem. The correct foods were put on board.

In three days, when they were as ready as they would ever be, Arnold decided to accompany Gregor as far as the Trigale Central Warehouse.

It was an uneventful trip to Trigale, but Gregor landed on



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the approach platform with considerable trepidation. There were too many stories about the Combine for him to feel entirely at home in their stronghold. He had taken what precautions he could. The ship had been completely fueled and provisioned at Luna Station and no Trigale man would be allowed on board.

However, if the personnel of the station were worried about the battered old spaceship, they hid it nicely. The ship was dragged to the loading platform by a pair of tractors and squeezed in between two sleek Trigale express freighters.

LEAVING Arnold in charge of loading, Gregor went inside to sign the manifests. A suave Trigale official produced the papers and looked on with interest as Gregor read them over.

"Loading Smags, eh?" the official inquired politely.

"That's right," Gregor said, wondering what a Smag looked like.

"Queels and Firgels, too," the official mused. "Shipping them all together. You've got a lot of courage, Mr. Gregor."

"I have? Why?"

"You know the old saying—'When you travel with Smags, don't forget your magnifying glass.'"

"I hadn't heard that one."

The official grinned amiably and shook Gregor's hand. "After this trip, you'll be able to make up your own sayings. The very best of luck, Mr. Gregor. Unofficially, of course."

Gregor smiled feebly and returned to the loading platform. The Smags, Firgels and Queels were on board, each in their own compartment. Arnold had turned on the air, checked the temperature and given them all a day's ration.

"Well, you're off," Arnold said cheerfully.

"I'm off, all right," Gregor admitted with no cheer whatever. He climbed aboard, ignoring a faint snicker from the watching crowd.

The ship was tractored to a blastoff strip and soon Gregor was in space, bound for a tiny warehouse circling in orbit around Vermoine II.

There was always plenty to do on the first day in space. Gregor checked his instruments, then went over the main drive and the tanks, pipes and wiring, to make sure nothing had broken loose in the blastoff. Then he decided to inspect his cargo. It was about time he found out what they looked like.

The Queels, in the forward starboard compartment, looked like immense snowballs. Gregor knew that they were prized for


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their wool, which commanded a top price everywhere.

Apparently they hadn't gotten used to free-fall, for their food was untouched. He left them banking clumsily off walls and ceiling and bleating plaintively for solid ground.

The Firgels were no problem at all. They were big, leathery lizards, whose purpose on a farm Gregor couldn't guess. At present, they were dormant and would remain so throughout the trip.

Aft, the five Smags barked merrily when they saw him. They were friendly, herbivorous mammals and they seemed to enjoy free-fall very much.

Satisfied, Gregor floated back to the control room. It was a good beginning. Trigale hadn't bothered him and his animals were doing all right in space.

This trip might be just a milk run, he decided.

After testing his radio and control switches, Gregor set the alarm and turned in.

HE awoke, eight hours later, unrefreshed and with a splitting headache. His coffee tasted like slag and he could barely focus on the instrument panel.

The effects of canned air, he decided, and radioed Arnold that all was well. But halfway through the conversation, he found he could hardly keep his eyes open.

"Signing off," he said, yawning deeply. "Stuffy in here. Going to take a nap."

"Stuffy?" Arnold asked, his voice very distant over the radio. "It shouldn't be. The air circulators—"

Gregor found that the controls were swaying drunkenly and beginning to go out of focus. He leaned against the panel and closed his eyes.

"*Gregor!*"

"Hmm?"

"*Gregor!* Check your oxygen content!"

Gregor propped one eye open long enough to read the dial. He found, to his amusement, that the carbon dioxide concentration had reached a level he had never seen before.

"No oxygen," he told Arnold. "I'll fix it after nap."

"Sabotage!" Arnold shouted. "Wake up, Gregor!"

With a gigantic effort, Gregor reached forward and turned on the emergency air tank. The blast of air sobered him. He stood up, swaying uncertainly, and splashed some water on his face.

"The animals!" Arnold was screaming. "See about the animals!"

Gregor turned on the auxiliary air supply for all three compartments and hurried down the corridor.

The Firgels were still alive


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and dormant. The Smags apparently hadn't even noticed the difference. Two of the Queels had passed out, but they were reviving. And, in their compartment, Gregor found out what had happened.

There was no sabotage. The ventilators in wall and ceiling, through which the ship's air circulated, were jammed shut with Queel wool. Tufts of fleece floated in the still air, looking like a slow-motion snowfall.

"Of course, of course," Arnold said, when Gregor reported by radio. "Didn't I warn you that Queels have to be sheared twice a week? No, I guess I forgot to. Here's what the book says: 'The Queel — *Queelis Tropicalis* — is a small, wool-bearing mammal, distantly related to the Terran Sheep. Queels are natives of Tensis V, but have been successfully introduced on other heavy-gravity planets. Garments woven of Queel wool are fireproof, insectproof, rotproof and will last almost indefinitely, due to the metallic content in the wool. Queels should be sheared twice a week. They reproduce feemishly.' "

"No sabotage," Gregor commented.

"No sabotage, but you'd better start shearing those Queels," Arnold said.

Gregor signed off, found a pair of tin snips in his tool kit and went to work on the Queels. But the metallic wool simply blunted the cutting edges. It seemed that Queels had to be sheared with special hard-alloy tools.

He gathered as much of the floating wool as he could find and cleared the ventilators again. After a last inspection, he went to have his supper.

His beef stew was filled with oily, metallic Queel wool.

Disgusted, he turned in.

WHEN he awoke, he found that the creaking old ship was still holding a true course. Her main drive was operating efficiently and the outlook seemed much brighter, especially after he found that the Firgels were still dormant and the Smags were doing nicely.

But when Gregor inspected the Queels, he found that they hadn't touched a morsel of food since coming on board. It was serious now. He called Arnold for advice.

"Very simple," Arnold told him, after searching through several reference books. "Queels haven't any throat muscles. They rely on gravity to get food down. But in free-fall, there isn't any gravity, so they can't get the food down."

It *was* simple, Gregor knew, one of those little things you



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would never consider on Earth. But space, with its artificial environment, aggravated even the simplest problems.

"You'll have to spin ship to give them some gravity," Arnold said.

Gregor did some quick mental multiplication. "That'll use up a lot of power."

"Then the book says you can push the food down their throats by hand. You roll it up in a moist ball and reach in as far as the elbow and—"

Gregor signed off and activated the side jets. His feet settled to the floor and he waited anxiously.

The Queels began to feed with an abandon that would have done a Queel-farmer's heart good.

He would have to refuel at the Vermoine II space warehouse and that would bring up their operating expenses, for fuel was expensive in newly colonized systems. Still, there would be a good margin of profit left over.

He returned to normal ship's duties. The spaceship crawled through the immensity of space.

Feeding time came again. Gregor fed the Queels and went on to the Smag compartment. He opened the door and called out, "Come and get it!"

Nothing came.

The compartment was empty.

Gregor felt a curious sensation in his stomach. It was impossible. The Smags couldn't be gone. They were playing a joke on him, hiding somewhere.

But there was no place in the compartment for five large Smags to hide.

The trembling sensation was turning into a full-grown quiver. Gregor remembered the forfeiture clauses in event of loss, damage, etcetera, etcetera.

"Here, Smag! *Here, Smag!*" he shouted. There was no answer.

He inspected the walls, ceiling, door and ventilators, on the chance that the Smags had somehow bored through.

There were no marks.

Then he heard a faint noise near his feet. Looking down, he saw something scuttle past him.

It was one of his Smags, shrunken to about two inches in length. He found the others hiding in a corner, all just as small.

What had the Trigale official said? "When you travel with Smags, don't forget your magnifying glass."

THERE was no time for a good, satisfying shock reaction. Gregor closed the door carefully and sprinted to the radio.

"*Very* odd," Arnold said, after radio contact had been made. "Shrunken, you say? I'm looking it up right now. Hmm . . . You didn't produce artificial gravity, did you?"



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"Of course. To let the Queels feed."

"Shouldn't have done that," Arnold said. "Queels are light-gravity creatures."

"How was I supposed to know?"

"When they're subjected to an unusual — for them — gravity, they shrink down to microscopic size, lose consciousness and die."

"But *you* told me to produce artificial gravity."

"Oh, no! I simply mentioned, in passing, that that was one way of making Queels feed. I suggested hand-feeding."

Gregor resisted an almost overpowering urge to rip the radio out of the wall. He said, "Arnold, the Smags are light-gravity animals. Right?"

"Right."

"And the Queels are heavy gravity. Did you know that when you signed the contract?"

Arnold gulped for a moment, then cleared his throat. "Well, that did seem to make it a bit more difficult. But it pays very well."

"Sure, if you can get away with it. What do I do now?"

"Lower the temperature," Arnold replied confidently. "Smags stabilize at the freezing point."

"Humans freeze at the freezing point," Gregor said. "All right, signing off."

Gregor put on all the extra clothes he could find and turned up the ship's refrigeration system. Within an hour, the Smags had returned to their normal size.

So far, so good. He checked the Queels. The cold seemed to stimulate them. They were livelier than ever and bleated for more food. He fed them.

After eating a ham-and-wool sandwich, Gregor turned in.

The next day's inspection revealed that there were now fifteen Queels on board. The ten original adults had given birth to five young. All were hungry.

Gregor fed them. He set it down as a normal hazard of transporting mixed groups of livestock. They should have anticipated this and segregated the beasts by sexes as well as species.

When he looked in on the Queels again, their number had increased to thirty-eight.

"REPRODUCED, did they?" Arnold asked via radio, his voice concerned.

"Yes. And they show no signs of stopping."

"Well, we should have expected it."

"Why?" Gregor demanded baffledly.

"I told you. Queels reproduce feemishly."

"I *thought* that's what you said. What does it mean?"



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"Just what it sounds like," said Arnold, irritated. "How did you ever get through school? It's freezing-point parthenogenesis."

"That does it," Gregor said grimly. "I'm turning this ship around."

"You can't! We'll be wiped out!"

"At the rate those Queels are reproducing, there won't be room for me if I keep going. A Queel will have to pilot this ship."

"Gregor, don't get panicky. There's a perfectly simple answer."

"I'm listening."

"Increase the air pressure and moisture content. That'll stop them."

"Sure. And it'll probably turn the Smags into butterflies."

"There won't be any other effects."

Turning back was no solution, anyhow. The ship was near the halfway mark. Now he could get rid of the beasts just as quickly by delivering them.

Unless he dumped them all into space. It was a tempting though impractical thought.

With increased air pressure and moisture content, the Queels stopped reproducing. They numbered forty-seven now and Gregor had to spend most of his time clearing the ventilators of wool. A slow-motion, surrealistic snowstorm raged in the corridors and engine room, in the water tanks and under his shirt.

Gregor ate tasteless meals of food and wool, with pie and wool for dessert.

He was beginning to feel like a Queel.

But then a bright spot approached on his horizon. The Vermoine sun began glowing on his forward screen. In another day, he would arrive, deliver his cargo and be free to go home to his dusty office, his bills and his solitaire game.

That night, he opened a bottle of wine to celebrate the end of the trip. It helped get the taste of wool out of his mouth and he fell into bed, mildly and pleasantly tipsy.

But he couldn't sleep. The temperature was still dropping. Beads of moisture on the walls of the ship were solidifying into ice.

He had to have heat.

Let's see — if he turned on the heaters, the Smags would shrink. Unless he stopped the gravity. In which case, the forty-seven Queels wouldn't eat.

To hell with the Queels. He was getting too cold to operate the ship.

HE brought the vessel out of its spin and turned on the heaters. For an hour, he waited, shivering and stamping his feet. The heaters merrily drained


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fuel from the engines, but produced no heat.

That was ridiculous. He turned them on full blast.

In another hour, the temperature had sunk below zero. Although Vermoine was now visible, Gregor didn't know if he could even control the ship for a landing.

He had just finishing building a small fire on the cabin floor, using the ship's more combustible furnishings as fuel, when the radio spluttered into life.

"I was just thinking," Arnold said. "I hope you haven't been changing gravity and pressure too abruptly."

"What difference does it make?" Gregor asked distractedly.

"You might unstabilize the Firgels. Rapid temperature and pressure changes could take them out of their dormant state. You'd better check."

Gregor hurried off. He opened the door to the Firgel compartment, peered in and shuddered.

The Firgels were awake and croaking. The big lizards were floating around their compartment, covered with frost. A blast of sub-zero air roared into the passageway. Gregor slammed the door and hurried back to the radio.

"Of course they're covered with frost," Arnold said. "Those Firgels are going to Vermoine I. Hot place, Vermoine I—right near the sun. The Firgels are cold-fixers — best portable air-conditioners in the Universe."

"Why didn't you tell me this sooner?" Gregor demanded.

"It would have upset you. Besides, they would have stayed dormant if you hadn't started fooling with gravity and pressure."

"The Firgels are going to Vermoine I. What about the Smags?"

"Vermoine II. Tiny planet, not much gravity."

"And the Queels?"

"Vermoine III, of course."

"You idiot!" Gregor shouted. "You give me a cargo like that and expect me to balance it?" If Arnold had been in the ship at that moment, Gregor would have strangled him. "Arnold," he said, very slowly, "no more schemes, no more ideas—promise?"

"Oh, all right," Arnold agreed. "No need to get peevish about it."

Gregor signed off and went to work, trying to warm the ship. He succeeded in boosting it to twenty-seven degrees Fahrenheit before the overworked heaters gave up.

By then, Vermoine II was dead ahead.

GREGOR knocked on a piece of wood he hadn't burned and set the tape. He was punch-



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ing a course for the Main Warehouse, in orbit around Vermoine II, when he heard an ominous grumbling noise. At the same time, half a dozen dials on the control panel flopped over to zero.

Wearily, he floated back to the engine room. His main drive was dead and it didn't take any special mechanical aptitude to figure out why.

Queel wool floated in the engine room's still air. Queel wool was in the bearings and in the lubricating system, clogging the cooling fans.

The metallic wool made an ideal abrasive for highly polished engine parts. It was a wonder the drive had held up this long.

He returned to the control room. He couldn't land the ship without the main drive. Repairs would have to be made in space, eating into their profits. Fortunately, the ship steered by rocket side jets. With no mechanical system to break down, he could still maneuver.

It would be close, but he could still make contact with the artificial satellite that served as the Vermoine warehouse.

"This is AAA Ace," he announced as he squeezed the ship into an orbit around the satellite. "Request permission to land."

There was a crackle of static. "Satellite speaking," a voice answered. "Identify yourself, please."

"This is the AAA Ace ship, bound to Vermoine II from Trigale Central Warehouse," Gregor elaborated. "My papers are in order." He repeated the routine request for landing privilege and leaned back in his chair.

It had been a struggle, but all his animals were alive, intact, healthy, happy, etcetera, etcetera. AAA Ace had made a nice little profit. But all he wanted now was to get out of this ship and into a hot bath. He wanted to spend the rest of his life as far from Queels, Smags and Firgels as possible. He wanted . . .

"Landing permission refused."

"*What?*"

"Sorry, but we're full up at present. If you want to hold your present orbit, I believe we can accommodate you in about three months."

"Hold on!" Gregor yelped. "You can't do this! I'm almost out of food, my main drive is shot and I can't stand these animals much longer!"

"Sorry."

"You can't turn me away," Gregor said hoarsely. "This is a public warehouse. You have to—"

"*Public?* I beg your pardon, sir. This warehouse is owned and operated by the Trigale Combine."



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THE radio went dead. Gregor stared at it for several minutes.

Trigale!

Of course they hadn't bothered him at their Central Warehouse. They had him by simply refusing landing privileges at their Vermoine warehouse.

And the hell of it was, they were probably within their rights.

He couldn't land on the planet. Bringing the ship down without a main drive would be suicide. And there was no other space warehouse in the Vermoine solar system.

Well, he had brought the animals *almost* to the warehouse. Certainly Mr. Vens would understand the circumstances and judge his intentions.

He contacted Vens on Vermoine II and explained the situation.

"Not *at* the warehouse?" Vens asked.

"Well, within fifty miles of the warehouse," Gregor said.

"That really won't do. I'll take the animals, of course. They're mine. But there are forfeiture clauses in the event of incomplete delivery."

"You wouldn't invoke them, would you?" Gregor pleaded. "My intentions—"

"They don't interest me," Vens said. "Margin of profit and all that. We colonists need every little bit." He signed off.

Perspiring in the cold room, Gregor called Arnold and told him the news.

"It's unethical!" Arnold declared in outrage.

"But legal."

"I know, damn it. I have to have time to think."

"You'd better find something good," Gregor said.

"I'll call you back."

Gregor spent the next few hours feeding his animals, picking Queel wool out of his hair and burning more furniture on the deck of the ship. When the radio buzzed, he crossed his fingers before answering it.

"Arnold?"

"No, this is Vens."

"Listen, Mr. Vens," Gregor said, "if you'd just give us a little more time, we could work out this thing amicably. I'm sure—"

"Oh, you've got me over a barrel, all right," Vens snapped. "It's perfectly legal, too. I checked. Shrewd operation, sir, very shrewd operation. I'm sending a tug for the animals."

"But the forfeiture clause—"

"Naturally, I cannot invoke it." Vens signed off.

GREGOR stared at the radio. Shrewd operation? What had Arnold done?

He called Arnold's office.



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"This is Mr. Arnold's secretary," a young feminine voice answered. "Mr. Arnold has left for the day."

"Left? Secretary? Is this the Arnold of AAA Ace? I've got the wrong Arnold, haven't I?"

"No, sir, this is Mr. Arnold's office, of the AAA Ace Planetary Warehouse Service. Did you wish to place an order? We have a first-class warehouse in the Vermoine system, in an orbit near Vermoine II. We handle light, medium and heavy gravity products. Personal supervision by our Mr. Gregor. And I think you'll find that our rates are quite attractive."

SO that was what Arnold had done—he had turned their ship into a warehouse! On paper, at least. And their contract *did* give them the option of supplying their own warehouse. Clever!

But that nuisance Arnold could never leave well enough alone. Now he wanted to go into the warehouse business!

"What did you say, sir?"

"I said this is the warehouse speaking. I want to leave a message for Mr. Arnold."

"Yes, sir?"

"Tell Mr. Arnold to cancel all orders," Gregor said grimly. "His warehouse is coming home as fast as it can hobble."

—ROBERT SHECKLEY


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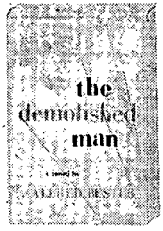


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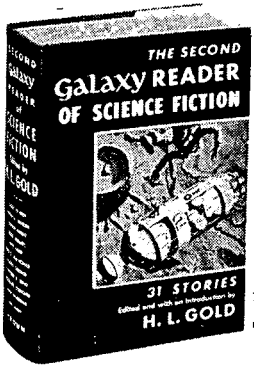


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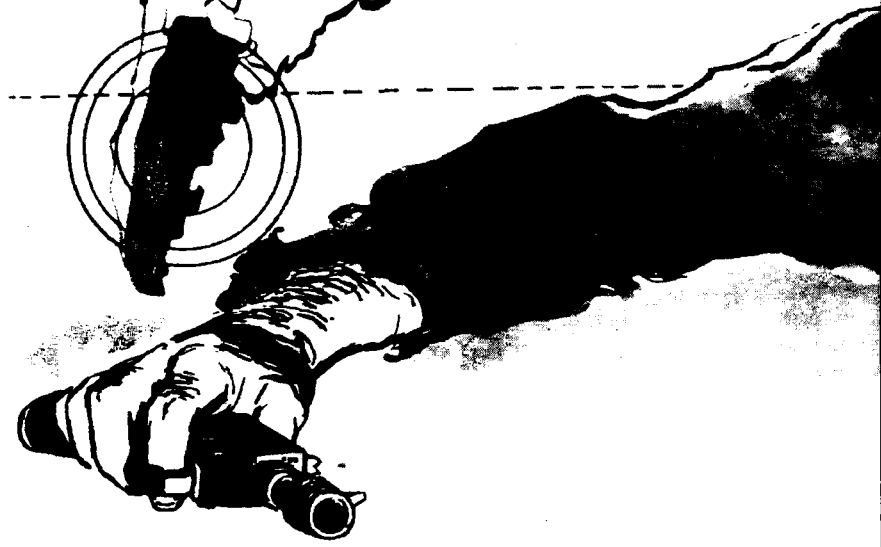
# SATAN'S SHRINE

By DANIEL F. GALOUYE

The night was dismally black and silent. Only a weak, warm breeze stirred the dust of the desolate crater-scarred plain. Far away, on the eastern horizon, a bluish-white glow flickered, highlighting a tremendous domelike structure.

Seconds passed. Then the sky roared angrily above four men

Illustrated by BARTH





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who huddled together in one of the craters, a hundred yards from the mile-wide edifice.

Art Grant raised his head cautiously over the lip of the depression. Almost directly ahead, a hundred-foot-high mound of earth lay against the sloping side of the dome, thrown up there, no doubt, by an earlier generation's nuclear missile.

"What are we waiting for, Captain?" a husky voice whispered almost in his ear.

It was Stausman, the Oxford-educated German.

Art slid back down the concavity of the crater. "We'll be ready to go in another ten or fifteen minutes, I guess."

"Fifteen minute, hell!" It was the Russian, Karneiv. "Go now, I say! Go and be finish with job more quickly!"

"Is it not *mon capitaine* who commands this squad?" Philip Latour, Parisian, demanded chidingly.

Thunder boomed, closer this time.

"If we wait until the height of the storm," Art explained patiently, "there's a chance that the more delicate detection devices will be affected by electrical discharge."

"*Voilà!*" exclaimed the Frenchman. "Now you have the reason, have you not?"

But Karneiv wasn't satisfied. "And the storm? What if it not come this way?"

Art moved his shoulders. "Then we'll go back and sit it out until the next one. It's better to wait a few days than to waste five years of training."

LIGHTNING flashed to their right—closer this time. Art counted seconds until the thunder came. The storm, he calculated, should sweep over them in less than five minutes.

The silence that followed was broken only by the rhythmic *clack-clack* of the radiation counters strapped on their wrists.

Art read the luminous dial on his instrument—twenty Roentgen rays an hour. He went over to the two ponderous metal cases that lay in the crater with them—had been with them for over an hour. The glowing needle swung up to twenty-five Rs.

"Gamma leakage the same?" asked Stausman.

"No change."

"Then we've had about a twenty-R dose so far."

"More or less," Art acknowledged. "We still have five hours left to get rid of this stuff without being in any danger."

The Frenchman rose and stretched his thin frame. "And, *mes amis,*" he asked, "it is all decided that I, Latour, will be the one who will—how do you say?—


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mix the ingredients to make the critical mass?"

"Like hell!" Karneiv lunged up. "It was a Russian who was first human to set off nuclear device by hand—in Great Palace of Kremlin. Will be Russian this time!"

Stausman's mastery of English broke under the impact of intense resentment. "*Nein!* Will be me!" he shouted, thumping his chest. Then in a calmer though still determined voice, he said, "I volunteered with the understanding *I* would set off the device!"

Latour's angry face was illuminated by another flash of lightning as he stood before the German, his bony fists knotted. "Latour will be the one! I, Latour, will—"

"Shut up!" Art's voice rasped. "We can decide that later."

But he knew there would be no decision. He was in command. And he would simply order them to return after they had helped bring the components of the device to the most vulnerable spot in the dome.

Sulking, the other three dropped back to the ground.

Then it started to rain—a vicious, pelting downpour that soaked them to the skin within seconds and sent rivulets streaming down their faces and cascading from their chins and elbows and from the tips of their weapon holsters.

Art grasped a handle of one of the metal boxes. "Let's go!"

Latour took the other handle and, under the great weight of the container, they struggled over the lip of the crater. Stausman and Karneiv followed with the other case.

In the driving rain, they plodded toward the dome, bending outward against the pull of their burdens.

"The Shrine of Satan!" Latour grunted, using both hands to support his half of the load. "Ten million tons of concrete and steel for one man. Truly he is *le diable!*"

THE mound of earth against the dome could not have been better located for their purpose had they supervised its construction.

Its top, where they now stood in the relentless rain, was only a few feet below the huge barrel of one of the thousands of missile ejectors that ringed the squat structure like a halo of spikes.

Art had thrown a rope over the barrel and the others had shinned up to a perch on top of the metal cylinder. Now he tied the rope to a second ponderous container and watched as they hoisted it up. Then, hand over hand, he climbed to join them.


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*"Sacrebleu!"* the Frenchman exclaimed. "Will not the weather himself stir *le diable* in his Shrine this night?"

Art laughed, throwing a leg over the end of the barrel. "Afraid not, Latour—not through a shell a thousand feet thick. But we'll see what *we* can do."

He dropped onto the slanting inner surface of the rifle and caught Latour's hand, as the Frenchman leaped down beside him. The two then struggled to lower the heavy boxes as Stausman and Karneiv handed them down.

Assembled in the barrel, they moved cautiously down the slope.

The dome trembled. Then another vicious flash and roar erupted less than a mile from the edifice, lighting even the inside of the missile ejector with intense purplish illumination.

Stausman shouted, "That was no bolt, Captain! Satan fired an interceptor missile! It exploded the incoming missile right outside!"

Art checked his watch. "They've jumped the gun! This can play hell with our plan!"

Latour sneered. "A fine example of Prussian coordination, is it not?"

"The instructions," Stausman snapped back, "were relayed through the French underground —don't forget!"

Art lifted his burden again and started forward in a lumbering run, pulling the Frenchman along with him. "Let's get out of here before Satan starts firing salvos back."

Discarding caution, they raced down the incline.

*"Mon Dieu!"* the Frenchman panted. "This rifle, is it not in the German attack sector?"

"Right in the center of it," Stausman replied. "Main European battery. It'll be one of the first to fire back. Right, Captain?"

ART didn't answer. He was staring ahead—at a faint glow that picked up a thousand reflections along the rifling of the barrel.

"A *light!*" Karneiv exclaimed. "But why? He need no light in outer defense! Loading, firing—all is automatic, no?"

"Of course," Stausman acknowledged, disturbed. "Even the assembly of the missiles."

They reached the end of the rifle and climbed out through a four-foot-wide slit along one side, squeezing past a metallic conveyor belt that bore a motionless string of sleek-nosed projectiles.

Leaping onto the concrete landing, Art and Latour reached up to take the metal containers and to help the other two men.

Almost as soon as they cleared


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the area of the belt, gears whirred and the line of projectiles inched forward, depositing the first missile into the barrel.

"It'll fire in seconds!" Art warned frantically. "The backlash of gases!"

Again, they paired off and struggled with the containers, stumbling down a wide corridor that paralleled the perimeter of the dome.

The concrete all around them shook and a wave of concussion pounded their eardrums.

"Already he fire back!" Karneiv shouted.

NOXIOUS gases caught up with them and they coughed spasmodically, slowing their pace.

The breech of the barrel through which they had entered now lay hidden around the curve of the corridor behind them. But visible ahead was the projectile belt and protruding breech of the next weapon. As they approached, the unit loaded a missile.

Another blast from their rear shook the monstrous structure and more hot gases swirled in the passageway.

Art stumbled and lost his grip on the metal case. It crashed against his leg, tearing cloth and scraping a strip of skin from his calf.

Stausman helped him up.

"*Voilà!*" Latour shouted. "There it is! The passage that goes inward!" He was pointing to a darker corridor that branched off to their left. They raced into it as the rifle immediately behind them fired.

Art stopped to inspect the bleeding wound in his leg.

Karneiv stopped to look, too. "Is unserious," he said.

"Perhaps. But I'd better wrap it up temporarily so we can go on." Art tore a strip from the ripped trouser leg and bound it around the wound.

"The Yankees—they not able to stand a little pain, eh?" Karneiv said sarcastically. "They prove that on Asiatic mainland; in Ukraine during Third War. Comrade Captain Starnoff—he should be leader to this expedition," he muttered. "He would have—"

"Quiet!" Stausman cautioned. "Satan may be listening."

"*Quite right, gentlemen.*"

The voice seemed to erupt from the very walls.

"*This is—let us see—Expedition Number Ninety-three. The first one in over ten years . . . Welcome, gentlemen! Let us sincerely hope that we shall derive equal enjoyment from your brief visit.*"

"*Le diable!*" Latour looked fearfully down the corridor.

"He's detected us already!" Stausman said hopelessly.



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Machinery grumbled and a concrete partition slid into place, closing off the radial corridor at the point where they had entered it.

*"Didn't you imagine you'd find even more thorough safeguards within the Shrine than without? You should have surmised as much, knowing that not a single member of the previous ninety-two expeditions returned to the outside."*

Art glanced over his head. He could see speakers, spaced at intervals along the ceiling, together with lights, audio pickups and shining lenses that were, no doubt, part of a video detection system.

*"Again I say welcome, gentlemen—a cordial welcome from the Supreme Autocrat of The Associated Nations . . . from, as you refer to me, Satan. May you enjoy your brief expedition."*

Art turned despairingly to the others. "I didn't think detection would come so soon. We now have little hope of gaining our objective. Whoever wishes to return has my permission to do so."

"And you, *mon ami?*"

"You know my answer, Latour. Thirty years ago my father led Expedition Number Eighty-five."

Latour patted him sympathetically on the shoulder. "Then, together, *mon capitaine,* we will extract *la vengeance* from *le diable.*"

Art turned to Karneiv. "And you?"

"If the Frenchman go, and the Yankee go, then without question the Russian go, too!" he said arrogantly.

"Stausman?"

The German laughed. "In the absence of pneumatic drills to break through that thing—" he motioned toward the concrete panel which barred their retreat —"you'll have to count me in, too, Captain."

THE radial corridor ended at an intersection with a peripheral passageway. As they approached, a concrete panel slid shut to block the left-hand branch of the new tunnel.

After they had hauled the metal containers almost a block past the intersection, they paused to rest again as Art adjusted the bandage on his leg.

Karneiv grumbled angrily. "We get nowhere if Yankee stop to rub leg all time."

His face set grimly, Art stared at the big Russian. "In training," he reminded sharply, "we decided on four rest periods an hour."

The Russian stepped closer. "But we not know then we would be detected so—"

A cry from the Frenchman drew their stares. He was point-


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ing to the floor a few yards down the corridor.

Almost indiscernible against the gray concrete was a human skeleton. Ahead was another, then farther on, they found three more.

"*Mon dieu!*" Latour exclaimed. "The dead ones—they are all along here!"

Stausman laughed briefly. "Frenchmen, no doubt."

Latour squinted at him. "You will please explain how you deduce that."

"They're the easiest to kill." The German's voice was devoid of jocularity. "If there are any dead Germans, you'll find them closer to the center of the Shrine."

Latour swore in French and lunged for the larger man.

Art stepped between them. "Save it till later," he ordered.

Tensely, Stausman and Latour started back for the crates, Art and the Russian following.

"This no shell." Karneiv swung an arm in the air around him. "All one solid hunk concrete with tunnels. Small wonder no attack had success."

Stausman stopped to wait for Art. "Our principal mistake, I think, Captain, has been in not establishing a system of getting information back to World Underground headquarters, where it could benefit future expeditions."

"I wonder," Art answered thoughtfully, "whether the other ninety-two expeditions had the same idea just about here."

Stausman shrugged indifferently. "You may be right."

The Frenchman paused before reaching down for his handle of the case. "How long, gentlemen—how many expeditions before *le diable* is dethroned?"

Art hoisted his end of the container. "Let's hope this is the last."

LATOUR shook his head forlornly. "I cannot be that optimistic, *monsieur le capitaine*. It has been three hundred years now. Ever since—"

"Ever since," Stausman broke in, "the French allowed Jornal Sakoran, the Immortal, to establish the nucleus of his Shrine on the Continent."

"I do not believe he is immortal," Karneiv interjected. "We go about this wrong!" the Russian continued. "What we do? We make secret appropriations—every year, from every national area in Associated Nations. We equip expeditionary force with different nationalities, so that will be no chance for any one nation to control Shrine and take up where Satan leave off—"

"We trust each other, don't we?" Stausman asked sarcastically.

"But is all wrong," Karneiv went on. "Last year alone, East



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Asians spent almost billion—Yankee area almost six hundred million—all for attack Shrine. In past ten year, we put almost thousand men in Secret Corps all over whole world. What it get us?"

"Shut up!" Art roared. Then in a whisper, "Don't you realize he can hear everything in here?"

"What the hell!" the Russian answered explosively. "He know already. He got spies all over. That's all he use money from national areas for—to keep up spy system, pay off agents."

They filed around several skeletons that were lying in the center of the corridor.

"I say we should attack spy system!" Karneiv was arguing. "Then Satan not know on which national area to make retaliation."

Art shook his head. "Tried that once. He just sat back and lobbed missiles into *all* the areas until his underground communication lines were restored. Killed several hundred persons all over the world that time."

Latour sneered. "Three thousand and I still would have resisted! Three hundred thousand died in the first hour of the Third War, is it not so?"

"Could have been three million," Art reminded him. "Destroying hundreds was just a—threat."

*"I see you have arrived at the first check point."*

ART started, almost dropping his end of the case, as the voice boomed from the ceiling and reverberated up and down the corridor from a score of speakers.

*"We shall have roll-call afterward."*

The speakers went dead and silence seized the corridor once more.

"Radioactivity up!" Latour shouted, bringing his wrist counter before his face.

Art was suddenly conscious of the vicious chattering of his detector. He jerked his head toward the metal case he had dropped, to see whether its lid had somehow been jarred loose. But it was intact, as was the other.

Now the counter was reacting so violently that it was setting up vibrations in his wrist.

"One hundred Rs!" the Frenchman gasped. He was holding his hand close to the wall. "She comes from both sides! From the ceiling too!"

Karneiv and Art sprinted down the corridor.

"One hundred and fifty!" Latour yelled as he and Stausman followed.

But the German glanced over his shoulder. "The device!" He



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was looking back at the two metal containers they had abandoned.

"Hell with them!" Art instructed. "We have only seconds to get out of this hot spot!"

Already the needle of his counter was halfway through the red mark on its dial.

A deep-throated laugh filled the passageway. "*Run faster, gentlemen,*" the voice urged through the speakers. "*You do not have much farther to go.*"

Art glanced behind him as he ran . . . and jolted to a stop.

Stausman had gone back and was struggling with the metal cases!

"Let them go!" he shouted angrily at the German.

"But we have to have them!" Stausman pleaded.

Hesitating, Art backed in the direction that Karneiv and Latour had gone. "We can't do a damned thing if we get shot up with radiation!"

Then he turned and raced after the other two.

Apparently convinced, Stausman followed, running at breakneck speed. But he faltered and fell, losing more critical seconds.

AROUND the turn in the corridor, Art found the Frenchman and the Russian, leaning against the wall.

"Clear here," Latour panted.

He drew up beside them, waiting for Stausman.

Karneiv was staring at his watch as the German reached them.

A concrete panel slid in place twenty feet to their rear.

Art fought his irregular breathing. "You keep a time check?" he asked Karneiv.

The Russian nodded. "I calculate Latour got single dose of about one-hundred-twenty R. Me too."

"Might vomit once or twice in a few hours," Art said thoughtfully.

"You, Captain, got almost two hundred."

Art frowned. "What about Stausman?" he asked.

Karneiv stared hesitatingly at the Captain who, in turn, glanced fearfully at Stausman.

"I kept check too," the German said unemotionally. "I got—"

The ceiling speakers rumbled. "*Over one thousand!*" the voice said. "*A fatal dose—not immediately fatal perhaps. There will first be vomiting and thirst and fever and delirium—in a short while. Then you will die.*"

Stausman clenched a fist and raised it toward the nearest video lens in the ceiling. "But not before I find you, you—devil!" he threatened. "Not before—"

"Easy," Art calmed him, hold-



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ing his arms at his side. "Exertion'll only make it worse."

"I don't give a damn!" the German exclaimed, his teeth set tightly together. "I'm not afraid of failure. I should have died in training three years ago—when they had to cover that hole in my skull with a plate!"

He broke loose from Art and bolted to race up the corridor. But Latour and Karneiv caught him, each by an arm.

"Let me go!" he screamed. "I'll find him! I'll—"

"Patience, *mon ami,*" the Frenchman whispered. It was the first time he had used the phrase addressing the German.

"You do no good by self." Karneiv shook his head dourly. "Perhaps together we find devil of Shrine before—"

Stausman relaxed in their grip. They released him cautiously.

"Feeling better?" Art asked, embarrassed after he had said it.

The German nodded, smiled weakly.

After a moment, Karneiv intoned softly, "Death to Satan!"

He was staring at the wall—at a spot above the outstretched arm of a skeleton. The bony fingers still clutched the rock that the victim had used to scratch *Expedition* 47 in the chalky concrete.

Farther along, another scrawl, *Death to Dictator Sakoran!* The phrase typed him as a member of one of the earliest expeditions—dating to the time before Sakoran had earned the more pointed alphabetical designation *Satan* from the initials of his assumed title, "Supreme Autocrat of The Associated Nations."

"THE Sun, he is just rising outside now, *n'est pas?*" Latour asked wistfully.

It was almost two hours after they had run the gantlet of the radioactive corridor. They were tired and haggard and had drawn up to allow Stausman to rest.

Art checked his watch and nodded.

"Then in three hours the—how you say? fireworks—they will commence, *non?*"

Art closed his eyes and passed a hand over his face. He was just beginning to experience the nauseating effects of exposure to gamma radiation. He swallowed with difficulty. "The general missile attack will begin in three hours and fifteen minutes," he acknowledged.

"Fools!" Karneiv roared in front of him. "The microphones! *He* listen!"

"He knows. The probing attack has been routine after almost every expedition. He will expect the missiles as a test of our success."

"*Bah!*" the Russian spat. "*Suc-*



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cess. We will fail! Satan play games with us!"

A grating sounded behind them and they whirled around, instinctively drawing their weapons. But it was only another partition, sliding into place to bar the passageway.

Stausman, who had just passed the spot, was leaning against the wall, sick. Latour uttered a sympathetic phrase in French and went back to grasp the German's shoulder and support him.

Karneiv turned to Art. "How much more we got to go? What you think?"

Art looked down at the floor hopelessly. "We haven't gone a fifth of the way to the center," he said in a voice that was intentionally low, so Stausman wouldn't hear.

"Look, Captain," the Russian said abruptly. "We come along curving corridors. We find doors of stone blocking our way so we must go only where he wants. Why we no break one of those doors when he make us go in circle again? Might be we find way straight in."

Art considered the suggestion. But before he could express his approval, he gagged suddenly and turned quickly away from Karneiv.

After he had finished, Art felt somewhat weak and his throat was dry and musty. He cursed himself for not having insisted that they bring along water.

STAUSMAN joined them and they all continued down the passageway. The German's face was pale and drawn and he walked unsteadily.

Art fell back and helped support the German. Karneiv walked cautiously ahead, mumbling angrily in Russian as they passed more skeletons.

"*Pourquoi?*" the Frenchman asked thoughtfully, looking down at the victims of another expedition.

When no one answered, he repeated, "Why? Why does not *le diable* stop us where we are? Why does he not kill us now?"

The others were silent, except Stausman, who showed no reaction.

Latour stopped and the rest of the party stopped with him.

"*Le diable*—could he not have closed us up in the radiation field? Or could he not have confined us in any section of the passage to let the hunger consume us, as it no doubt consumed these poor unfortunates here?"

Karneiv frowned deeply. "Is so. Why he no do it?"

"*Diversion, gentlemen,*" the amplified voice erupted in the speakers. "*It is not often that I am privileged to observe my subjects at such close quarters.*



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*Therefore, I am not disposed to cut my amusement short.*"

Stausman shouted frenziedly and tore loose from Art and Latour. He reeled down the corridor until he reached a spot underneath the first suspended speaker.

Then his revolver was in his hand and he was firing up at the vibrating diaphragm. The first two shots silenced the speaker and he stood swaying in the center of the passageway.

Now the amplified voice was a series of secondary echoes that reached them from points farther along the tunnel. "*Shoot at them Go ahead! You cannot hit me!*"!

Still dazed, the German turned on the other three men. His face was red—his eyes half closed—his body trembled.

"*Stausman!*" Art shouted. The German was going to open fire on them!

He raised the revolver.

The Supreme Autocrat's reverberating laughter seemed to quicken his movement.

The German fired an ineffectual shot with his wavering hand.

Latour sprang, diving in under him and coming up beneath his outstretched arm.

Then he seized the German's wrist and wrested the gun from him before he could fire again.

The German fainted.

Art felt ill again. Nausea, aggravated by the emotional impact of the incident, swept over him.

"Goddam devil!" Karneiv roared, shaking his fist at the video cell over his head.

Then he snapped his gun from his holster and took careful aim. The weapon spat and the lens shattered.

Latour, shouting a string of French expletives, raced to the next video pickup station and shot out its lens, too.

"Wait!" Art ordered, straightening. "Save it. Maybe he wants us to get rid of our ammunition."

HOLLOW laughter came again from remote speakers. "*Shall we proceed, gentlemen?*"

Art recovered from his seizure, went over to help Latour with Stausman.

"The radiation," the Frenchman observed, "I did not know it could do so much to a man in so little time."

"It shouldn't," Art agreed. "But that skull plate in his head may have something to do with it. There might be an absorption factor that—"

A concrete panel slid open swiftly on their left.

"*Check point, gentlemen,*" the Supreme Autocrat announced.

A second panel sprang out from the wall ahead of them. The new avenue which had been opened was not a corridor. Rath-



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er, it was a room, fifty feet wide and at least two hundred feet in length. The mouth of another tunnel was open at the other end. The floor was littered with the remains of past victims.

"*Sacrebleu!*" the Frenchman exclaimed. "Can we deny that here lies almost half the personnel of all the other ninety-two expeditions?"

Karneiv suddenly poked a thumb in the direction of Stausman. "If we go, I say we leave him."

Art stared at the Russian.

"He no good to us," Karneiv explained emotionlessly. "He only hold us back."

Art's face was grim. "He goes —even if Latour and I have to carry him. Right, Latour?"

"*C'est correct!*"

Karneiv swore disgustedly. "Then Karneiv goes alone!"

"You'll stay with the expedition!"

The Russian shrugged uneasily. "I stay, but—"

"*Are you all ready?*" the Supreme Autocrat broke in.

Karneiv and Latour stared apprehensively into the room with the skeletons.

"*First,*" the voice continued "*let me take this opportunity to congratulate you while you are still there to hear. I find your method of entry into the Shrine quite novel. My commendations.*



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*I had been wondering when they would think of the ejectors. Until now, entry has usually been through the air ducts—or, occasionally, through the supply intakes that were in use before the Shrine became self-sufficient by assembling a four-thousand-year stockpile of supplies.*"

The Supreme Autocrat's voice was free of accent, Art realized for the first time. Was it that, in his centuries-old despotism over nearly all the nations of the world, he had severed all ties of nationalism—including his native French tongue?

"*Come, gentlemen.*" The Autocrat mocked them. "*Let us not waste my time. The test missiles will be fired shortly to determine whether you have succeeded. I must be free to direct the immediate retaliatory measures.*"

"We stay here, *diable!*" the Frenchman roared defiantly.

STAUSMAN straightened, freeing himself from Art's grip, and lunged into the room.

Nothing happened to the German.

Abruptly, Art was aware of the accelerated *clacking* of his wrist counter.

"*Radiation!*" the Russian exclaimed frantically.

"*A little persuasion, gentlemen. I'm quite sure you'll decide to enter.*"

Karneiv and Latour ran inside. Art followed. Glancing overhead, he saw there were no video lenses, no speakers or microphones in this new chamber.

"But there is nothing in here!" the Frenchman exclaimed.

Their wrist counters had silenced abruptly with their departure from the corridor.

"Psychology, perhaps," Karneiv said unsteadily. "Fear psychology."

"Get across to the other corridor," Art urged, "before he closes that door too!"

Running, they overtook Stausman, who was still plodding forward. They grabbed his arms and pulled him along with them.

Suddenly, a tongue of unseen fire licked at Art's wrists, where the radiation counter and watch were strapped.

Karneiv shouted hoarsely.

Latour screamed in pain.

Stausman collapsed and lay limp on the floor, his body twitching as though wracked by high-voltage current, as he lay there among three long-dead invaders.

Art staggered and fell. But he got up immediately and raced, terror-stricken, toward the exit ahead, his mouth an agony of hot coals. He cried out in anguish.

Then he was tearing at the straps of his radiation counter and watch. He got them off and cast the instruments from him,



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their metal cases glowing red-hot.

His shoes were smoking and he kicked them off as he ran. There was a nest of fire in his side, next to where the revolver was strapped. As he glanced down at the weapon, the smoldering holster burst into flame.

"We're in a selective induction field!" he shouted frantically.

He seared his fingers unsnapping his belt buckle, to hurl the white-hot weapon from him.

The Russian and the Frenchman had gotten rid of the metal on their bodies too—had kicked off their shoes which, even now, were bursting into flame from the heat of the inner nails.

Art was three-fourths of the way across the room when he was almost deafened by the roar of exploding, super-heated cartridges in the chambers of their discarded revolvers.

After an eternity of blinding pain, he lunged into the corridor, following Latour and Karneiv out of the chamber of torture.

They dropped to the floor in the dimly lit passageway and lay there, exhausted, fighting the agony in their mouths where the metal of dental fillings had heated under the effects of the induction field.

AS if hypnotized, they all watched the door slide shut, closing off the room behind them.

"Stausman?" asked Latour.

Art shook his head regretfully.

"Plate under scalp?" Karneiv asked hesitatingly.

Art nodded. "By now it's just molten metal."

The overhead speaker rumbled harshly. "*I see there are still three of you, gentlemen. Now, let me see—I would guess that the Frenchman will be next. He seems to be the least capable of surviving.*"

Latour jumped up, his fists clenched. "I will outlive you, pig!" he roared. His face was contorted with hate.

"Easy, Latour." Art tried to calm the enraged Frenchman. "Let's not make it any more amusing for him."

Latour's shoulders sagged despairingly. Then he looked dolefully at Art. "But what will we do, *capitaine?* We have no weapons! We have not even the dignity of wearing shoes. *Je suis dans l'embarrass!*"

Art accepted Latour's statement literally. "I'm a bit more than embarrassed," he said. "I'm down to the where-in-hell-do-we-go-from-here feeling."

He brought his wrists up and inspected the red, blistered flesh where the heated metal of his watch and radiation counter had left ugly, raw wounds. His trousers were smoldering where the flaming holster had lain against



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them. He beat out the embers with his hands.

The Russian was moaning softly, blowing on his burned wrists. "World national areas," he asked thoughtfully. "How much they got to pay Autocrat?"

Art leaned against the wall and closed his eyes. The physical pain of his wounds was being pushed into the background now by the returning internal effects of the excessive radiation. "Your area kicks in about a billion a year—mine a little more."

"And for what, *mes amis?*" the Frenchman asked before Karneiv could react to the information he had requested. "Only for to fill the pockets of *le diable,* so he can pay his espionage agents and his *governeurs* for the national areas."

The Russian rose and shook his seared wrists, while he paced restlessly. "I say let Autocrat have his extorted money," he said bitterly. "World should do what he want. I say leave Shrine alone."

"Give the devil his due, eh?" Art asked.

"*Eh, bien!*" Latour spread his arms despairingly. "What is it he wants? He rule all the world—yet he stay in his Shrine as though he not exist at all. He seeks no acclaim—yet all must be his slaves."

"He wants only power, Latour." Art recalled the pictures he had seen of the short, stout dictator—pictures that emphasized the cruel lines of his florid face. "A megalomaniac, who is determined that there be no armies in the world that might eventually be turned against him—no weapons that might be aimed at the Shrine."

"And this slavery, *mon capitaine*—how long must it continue?"

"Supreme Autocrat," Karneiv said stonily, "had secret of immortality from scientists even before he build first shell of Shrine. Will live forever."

"It will go on," Art added, "four thousand years at least. He has supplies and ammunition to last that long."

"Longer," Karneiv corrected. "Can get more whenever he want."

Art walked away from the others before he leaned against the wall and surrendered to the revolt his tortured stomach had been spawning.

THEY were in one of the long, curving corridors again. But this time the arc was more pronounced and Art called attention to the fact that a more noticeable curve could only mean a smaller periphery. Which, in turn, indicated nearness to the center of the Shrine.



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He walked almost in a daze, his face flushed and his pulse pounding. The nausea was gone, but in its place was a thirst that was almost as torturous.

"*Water!*" the Russian shouted excitedly, staggering forward.

Puzzled, Art raced after him to prevent any lengthening of distance between them that might put Karneiv out of sight.

Ahead, in the center of the tunnel, was a plain table. On its surface was a huge pitcher and several glasses.

"*Don't*, Karneiv!" Art warned. "Don't drink it!"

The Russian ignored the warning. He grasped the pitcher between his large hands and raised it to his mouth. After he had finished drinking, he handed the container to the Frenchman.

"Good!" Karneiv exclaimed exuberantly.

"But it might be—" Art cut the sentence short, watching Latour drink.

"What the hell!" the Russian shrugged. "If it poison, it good poison."

Art took the pitcher from Latour and sipped from it. The water was ice cold and it swept away the fire that had been blazing in his raw throat.

"*Now that we have refreshed ourselves, gentlemen, let us prepare for the next check point.*"

The three men started, then regarded each other hesitatingly.

"*You will notice that on your left is a straight passage.*"

Art stared distrustfully into the radial tunnel he hadn't noticed before. But he could see nothing. In the absence of a lighting system, it was but a yawning void.

"*One of you will enter it. The other two will continue ahead. It is necessary that the party be split into smaller components at this point. I have prepared something special, but only two can be accommodated.*"

"We no separate!" Karneiv shouted in the direction of the closest microphone.

"*I think you will, gentlemen. I have very efficient methods of coercion, as you already realize.*"

Art tried to produce mental pictures of the possible tortures that might lie ahead for the two who would continue along the peripheral corridor.

"I'll go on ahead," he said to Latour. "You and Karneiv decide who will go with me."

Laughter erupted in the speakers. "*I'm afraid I'm misunderstood. Ahead lies something interesting, of course. But the dark corridor offers only—immediate death.*"

ART leaned against the table, his head lowered in despair. "Then whoever continues," he



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said meditatively, "will have the only chance of reaching—" He tilted his head in the direction of the speakers. "Looking at the problem objectively," he said, "I'm in the worst physical condition and am of least value." He headed toward the dark corridor.

Latour grabbed his arm. "*Non, mon capitaine!*"

Karneiv pulled the Frenchman away. "Let him go. He sick. He no help for the cause. You, me—we get to Autocrat."

"Never will we reach him!" Latour's voice rose in rejection of the Russian's optimism. "And no longer will I, Latour, do as he directs!"

"*You will all do as I direct!*" the Supreme Autocrat declared. "*I have only to inform you that there are selective induction coils in the walls. And these particular ones are tuned so their effects will be felt in material much softer than metal.*"

"You lie!" Latour shouted. Then to Art, "Is it not impossible that he can have all this Shrine wired like one magnificent coil? He—bluffs!"

Art pushed him off gently. "Go with Karneiv."

Then he stepped into the unlit corridor.

The stone panel started to close behind him.

But Latour lunged through at the last second. Immediately afterward, the stone thudded against its stop behind them.

"You fool!" Art told the Frenchman. "He'll—"

Karneiv's frantic screams, barely audible, erupted in the outer corridor. The terrorized outbursts continued for almost a minute, as Art and Latour listened, stunned in the darkness. Then they ended abruptly.

"*Ah!*" exclaimed the Frenchman in a whisper. "*Monsieur le diable* has tried to trick us, *n'est pas?*" His voice rose excitedly. "Was it not in this corridor that he said was the certain death? Yet, as soon as the door is closed, it is the other one that becomes fatal. *Eh bien!* It was his desire to kill two of us that time and to permit only one to live."

"*You have guessed right, Frenchman.*" The Autocrat's voice sounded in the darkness. "*And you have interfered with my schedule. But it makes no difference. The end result will be the same.*"

Art reached for the Frenchman's shoulders, pulled him closer. "Without lights," he whispered, "he can't track us with his video system. If we keep quiet, he won't be able to follow us through the mikes either."

"Then we proceed?" Latour asked eagerly.

Art went ahead silently. "On tiptoe, if necessary."


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"But—" the other lowered his voice—"can he not turn on the lights whenever he wishes?"

"There *are* no lights in this corridor. I saw that as I entered."

Art guided himself with a hand along the wall.

"And the doors," the Frenchman suggested. "Is it not possible that we may reach one before he thinks to close it? Then we may go through several more without *le diable* knowing it. We will be lost from him, *n'est pas?*"

TIME was endless as they felt their way in the tunnel. Art guessed a half-hour had passed when the Frenchman tightened his grip on his shoulder.

"The doors—we have reached none of them yet, *capitaine?*" he whispered.

Art considered not telling him, but decided it would be better to be frank. "We've passed a helluva lot of doors—all closed."

Latour gasped. "Then he has made the preparations for us already! It is no use, *mon ami. Le diable* still herds us—like swine."

"Latour!"

"Yes?"

"Ahead—there's a light!"

They stopped. Faint illumination, only a hundred feet or so ahead, bared the end of the corridor. But Art could not discern the light's source.

The Frenchman swore. "A—how you call it?—dead end. Now we will starve without ever finding our way out—"

"No, Latour. Look—the corridor turns right! That's where the light's coming from."

Silently, they went ahead.

Close to the juncture, Art pressed his back to the wall and inched forward. Then, even more cautiously, he peered around the corner. He jerked his head back immediately.

"*Latour!*" His whisper was barely audible. "It's the Autocrat! He's right around the bend!"

The Frenchman tensed, opened his mouth. But Art clamped a hand over it.

"He's in the corridor—not thirty feet away—waiting!"

"Did he see you?"

"No."

"*Sacrebleu!* What does he do?"

"Nothing. He's just standing there."

"A trap!"

"No. His hands are empty. There are no weapons."

Art hazarded another glance. Jornal Sakoran stood with his hands hanging by his sides. There was an expression of impatience on his face.

"*Le diable*—he is still there?" Latour gripped his arm.

Art nodded absently. Confounded, he tried to imagine what


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the ruse might be. Certainly, the one-time national dictator who had seized control of a world centuries ago could not be submitting to capture now. Nor was it possible that he could be unaware of two survivors of an expeditionary force who were dangerously close. Yet . . .

With an abruptness that took him by surprise, Latour brushed by and lunged around the corner. Art sprang after him, but the Frenchman had a lead of more than ten feet. Sakoran looked up, smiling.

At the last moment, Art sensed the trap and desperately tried to brake himself. "*Latour!*" he screamed. "*Don't*—"

It was too late. Electrical flames crackled, enveloping Latour's body in brilliant, consuming light. Smoke hissed from his charred figure, even as he dropped lifelessly to the floor. At the same time, there was the crashing sound of shattering glass. and the image of the Autocrat blanked out.

Art, horrified, drew up before the smashed electronic screen that had completely blocked the corridor and had presented the three-dimensional telecast image of Sakoran while it also served as an indiscernible death trap.

But even with the illumination gone from the now dead screen, there was still light in the corridor. It came from around another bend in the passageway beyond.

DAZED, Art numbly stepped through the jagged remnants of the screen, around the smoldering body of the Frenchman.

He knew that the invulnerability of the Shrine was no myth. Truly, the Supreme Autocrat was invincible. He had killed Stausman, Karneiv, Latour, the scores who were now only skeletons in the corridors, with incredible ease. But wasn't that to be expected? Hadn't he had centuries to learn how to slaughter?

Art lowered his head dejectedly as he continued forward. He went around a bend and jolted to a stop, rigid with astonishment.

Immediately ahead, the passageway widened into a great circular compartment, almost a hundred yards in diameter.

*It was the Inner Shrine!*

Great gleaming instruments, scores of control panels that were clusters of switches and dials and levers, gauges and indicators and purring machinery—all occupied every available space along the perimeter of the room. Overhead, hundreds of luminescent screens covered the tremendous curved ceiling—the nerve-center of the Autocrat's worldwide communications network.

In the middle of the impres-


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sive chamber was a smaller dome of lead, a fifty-foot-high bubble whose standard arrangement of flashing red lights identified it as the Shrine's nuclear power pack ——a *reactor pile!* One that, if made to exceed its safety limits, could be as devastating as a thousand nuclear devices like the one Art and the other members of his expedition had brought with them in the twin metal containers!

But there was no sign of the Autocrat. Was this only another check point?

Bewildered, Art entered the room.

It was no trap! He stood among the glistening array of instruments and controls. He was in the vulnerable center of the most impregnable fortress ever built!

He saw the doorway between two towering instrument cases along the wall on his left. He peered in cautiously. He could see what appeared to be living quarters—plush chairs, tapestries, thick carpets, the edge of a bed.

The door swung wide and the Supreme Autocrat stepped from concealment, a gun in his hand.

Art swore. He had been defeated by his own curiosity! He should have raced for the nuclear pile and . . .

"Come in," said Sakoran. He motioned with the gun and swung to the side as Art entered.

Then the Autocrat sighed deeply and smiled. But it wasn't a smile of derision! It was a warm smile of welcome.

"Don't be alarmed," he said. "The weapon will be used on me—not you. But I fear I may need it to hold you off until I am ready."

SPEECHLESS, Art fell backward until he sensed there was a chair behind him. Then he fell sitting in it.

The Autocrat, dressed in a long, gray robe, leaned against a table in the center of the elaborately comfortable room.

"I thought, for a while, the Frenchman would be the successful candidate," he said. "There was much to be commended in his devotion to your cause and his general sense of fraternity and sympathy. But it was his loyalty that disqualified him. It was apparent that he would have immediately told the world about the Shrine."

Art continued to stare incredulously at Jornal Sakoran, the immortal dictator, the Supreme Autocrat of The Associated Nations. There was an incongruity somewhere — an incongruity over and above the impossible developments of the past few minutes. But he was unable to define it.

"However," Sakoran continued,


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"I found myself incapable of an unbiased decision. So I let the electronic screen decide. The Frenchman eliminated himself."

"Eliminated . . . ?" Art repeated densely.

"Of course. The check points are a process of elimination by which all but the strongest are discarded and the one most fit to assume—"

Art leaped up. "You killed my father!"

"Your father?" Sakoran's hand tightened on the gun and Art relaxed again. "Did he come here with one of the expeditions? Which one?"

"Number Eighty-five."

Sakoran shook his head. "Before my time, I'm afraid. Anyway, that was not a changeover expedition. No, I did not kill your father. You see, I wasn't Satan at the time."

"*You weren't Satan?*" Art repeated, stunned.

"No—I became the Supreme Autocrat two years later. Expedition Eighty-seven."

Art fell back into the chair. Now he recognized the inconsistency that he had felt on first looking at the Autocrat. The man before him was tall, gaunt. His eyes were blue. And his hair, although gray now, had no doubt been blond when he was younger. While Jornal Sakoran, the French dictator who had built the impregnable Shrine, had been short, stout—had black, crimped hair and intense dark eyes!

*Sakoran was not immortal! Sakoran was dead!*

"You see," the Autocrat continued, "I am Satan the Fourteenth. But, about the eliminations and the check points—as I was explaining, their end result was your selection as Satan the Fifteenth. I feel sure that you will make a very efficient Supreme Autocrat."

ALMOST a minute later, Art overcame his astonishment. "I don't understand."

"It's rather difficult to explain," the Autocrat said. "Let me start off by saying that the deaths in the corridor, sadistic as they seem, are necessary. First, there can be no more than one Satan at a time. Even minor differences of opinion, or inherent concern for the welfare of a particular nation, might wreck the effectiveness of the Shrine.

"You see, not all expeditionary groups meet the same fate as yours—only the changeover ones, of which yours was the thirteenth. Of the remaining eighty expeditions, all were executed quite humanely. They had to be killed to protect the Shrine as well as to prevent their possible escape and betrayal to the world of the true nature of the Shrine. And—"


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"But why—*why?*" Art shouted.

"Why must there be a succession of Satans?" the Autocrat rephrased the question. "I'll try to explain. When Sakoran established his Shrine as a means of despotic control over his nation, Earth had just fought the Third War.

"It was not a pleasant chapter in history, I assure you. Over a hundred million persons all over the world were annihilated in the war. All world governments were bankrupt. Poverty was rampant. Then came new distrust and, even with the millstone of destitution around its neck, humanity plunged into another armament race.

"In the year Sakoran seized control of France, the leading powers spent a total of more than eight hundred billion for weapons and armies. By comparison, the nations now expend a total of about thirty billion annually on two items—one, forced consignment of capital to governors appointed by the Shrine—two, secret appropriations for weapons to attack the Shrine. There is quite a difference between eight hundred billion—and thirty billion.

"And there is also a difference between the thousand men who are serving the Secret Corps and the millions who would be serving in the armies of the world, if there were no Shrine to outlaw those armies and their weapons under the pretense of self-defense for Satan."

"You mean the whole setup is —insurance against war?" Art asked incredulously.

The Autocrat nodded. "Humanity's greatest debt of gratitude belongs to Jornal Sakoran, the despot. The greatest year the race ever knew was the one in which he was able to extend his rule over all world powers, merely by dropping a few missiles on key cities and demonstrating the invulnerability of his Shrine when the counter-attacks came."

"But Sakoran? What happened to him?"

"The sixth expedition into the Shrine was successful, as you will read in the records here. However only one member survived in that group. It is a good thing for the world that he was a man of foresight. After he killed Sakoran, he became Satan II, successfully repelling all other invasions of the Shrine until he realized he was too old to continue in his role. He then allowed one member of Expedition Seventeen to survive the elimination tests that he had devised.

"Satan II wondered, at first, whether other candidates in the future would be instilled with the same principles as he was—whether they would be willing to



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assume the role of Supreme Autocrat and make themselves the target of more hatred than the world has ever shown for a single individual.

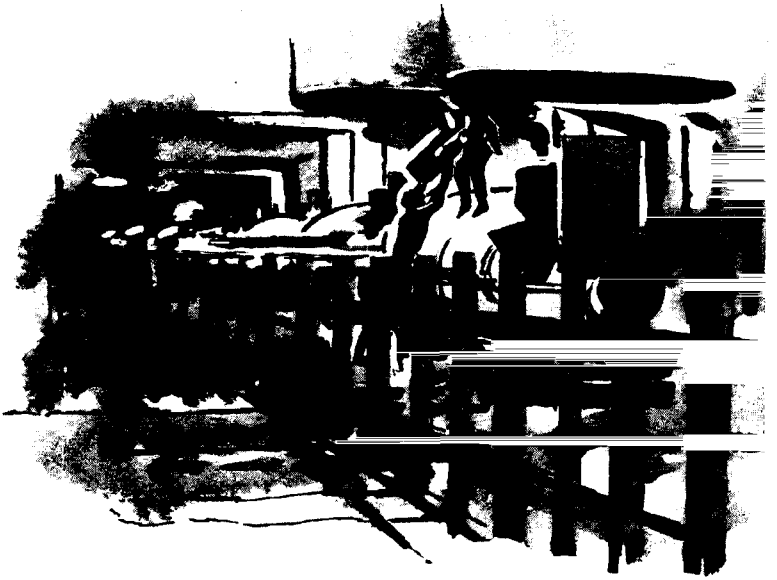
"But subsequent changes of command here have proved that no qualified man, once he realizes his responsibilities to humanity, can reject the role."

ART was silent. Finally he looked at the Autocrat. "How long must it continue?"

"National areas are already beginning to learn to live with other national areas. But there is still much progress to be made. Another five hundred years, perhaps another thousand. Our most positive indication of advance in that direction will be the era in which the world discontinues sending expeditions to destroy the Shrine. When that day comes, the Satans will have to devise other means of perpetuating themselves. But that won't concern you."

The Supreme Autocrat held the gun up before him and looked at it thoughtfully.

"I'm so glad you've come," he said plaintively. "It's been hard—lonely. I've killed hundreds. And, all the while, I could never be sure that it was—right."





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He raised the gun relievedly to his temple.

"*Wait!*" Art shouted. "Suppose I don't want to be the—the Autocrat?"

"You have no choice. All the avenues of escape are sealed off. When you learn how to open them, I believe you will have changed your mind."

After a pause, he went on. "In a year or two, you will learn how to control all the devices in the Shrine. And, until you do, any expedition which comes along will be disposed of automatically. Even the firing of the interceptor missiles will be out of your jurisdiction temporarily."

"But how . . . ?"

"You'll be instructed by automatic recorded tapes and visual educational aids through the medium of several of the ceiling screens." He stared unseeingly at Art. "And now, son—I'm a tired, old man . . . "

The Shrine shivered almost imperceptibly and the faintest of rumblings reached Art's ears.

"Those are our interceptor rockets going off to meet the probing missiles," the Supreme Autocrat said. "You will have to retaliate immediately if you expect to preserve discipline and respect. The controls you'll need are immediately beyond that door—the first panel on your right."

NUMBLY, Art went out the door, stood before the panel.

A screen overhead repeatedly flashed the words *Missile Origin.* It went blank a moment, then came on again with a map of South America. Most of the map faded from the screen, leaving only the impression of Argentina.

In front of him were scores of control studs, each designated with the name of a different city. He found the one marked Buenos Aires and adjusted the vernier control slightly, watching the results of his manipulation on the map overhead.

A small *x*-mark, indicating where the retaliatory missile would strike, moved southward. When he was sure he had displaced it to an area where there would be a minimum of casualties, he pressed the button.

The Supreme Autocrat's gun went off almost at the same time in the other room.

Art glanced over at a blank area on the wall next to the door. On the space was written a list of Satans. The last entry was Arnold Stolman, Satan XIV, 2968-2996 A. D.

He felt the faint vibration as the retaliatory missile fired.

With a heavy pencil that was on the control panel, he added:

"Art Grant, Satan XV, 2996—— A. D."

—DANIEL F. GALOUYE



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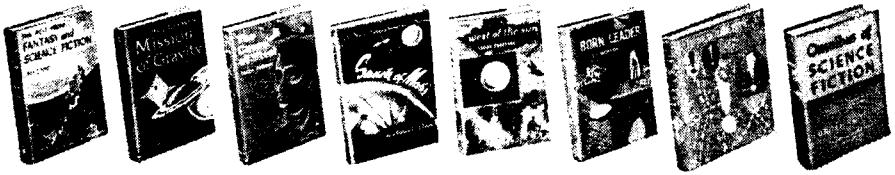


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